## SITE TEAM EVALUATION PRIORITIZATION REPORT

#### SOUTH DAYTON DUMP AND LANDFILL

1976 Dryden Road (Springboro Pike)
Moraine, Ohio
Montgomery County

U.S. EPA I.D. #OHD980611388

#### Prepared by:

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December 24,:1996 ...

US EPA RECORDS CENTER REGION 5

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#### 1.0 EXECUTIVE SUMMARY

Ohio Environmental Protection Agency (Ohio EPA) Division of Emergency and Remedial Response (DERR) personnel conducted a Site Team Evaluation Prioritization (STEP) of the former South Dayton Dump and Landfill in Montgomery County, Ohio. The purpose of the STEP investigation was to determine if previous disposal activities at the site released contaminants into the environment, specifically to soil, sediment, and ground water.

The STEP investigation of the site occurred in two phases. Phase I consisted of ground-water screening from seven exploratory borings drilled at the site in February of 1996 and the installation of three monitoring wells in April of 1996. The ground-water screening was conducted to determine the location of any contaminant plume(s) emanating from the landfill and to measure the quality of the ground water beneath the site, both for the purpose of aiding in the placement of the monitoring wells. Phase II of the STEP investigation, performed on July 9, 1996, the results of which are documented in this report, consisted of the collection of 12 soil samples, 6 sediment samples, and 5 ground-water samples. No surface water or air sampling was performed.

The results of the STEP investigation reveal the presence of the following contaminants at concentrations three times greater than background: VOCs, SVOCs, pesticides, PCBs, TAL metals, and cyanide in soil; pesticides, aroclor-1254, and mercury in sediment, and VOCs, phenol, heptachlor, and potassium in ground water.

#### 2.0 INTRODUCTION

The Ohio Environmental Protection Agency (Ohio EPA) Division of Emergency and Remedial Response (DERR) formed a cooperative agreement with the United States Environmental Protection Agency (U.S. EPA) Region V to conduct a Site Team Evaluation Prioritization (STEP) of the former South Dayton Dump and Landfill (a.k.a. South Dayton Landfill or Moraine Recycling), U.S. EPA I.D. #OHD980611388 (Latitude: 39' 43' 34", Longitude: 84' 13' 17"). This report was prepared to address potential effects the site may have to the surrounding areas.

#### 2.1 Project Background

On March 17, 1995, Ohio EPA personnel conducted a site reconnaissance at the South Dayton Dump and Landfill to document site conditions. A follow-up visit was conducted on August 10, 1995. Based on file reviews, site conditions, and interviews, a STEP workplan was prepared by Ohio EPA and approved by U.S. EPA.

The STEP investigation of the site occurred in two phases. Phase I consisted of ground-water screening from seven exploratory borings drilled at the site and the installation of three monitoring wells. The ground-water screening was conducted to determine the location of any contaminant plume(s) emanating from the landfill and to measure the quality of the ground water beneath the site, both for the purpose of aiding in the placement of the monitoring wells. Ohio EPA personnel conducted Phase II of the STEP investigation on July 9, 1996, which consisted of the collection of soil, ground-water, and sediment samples. The results of this phase of the STEP investigation are documented in this report.

#### 2.2 Purpose

The purpose of this STEP report is to describe the current environmental threat posed by previous disposal activities at the site. The data and information generated from this investigation will be used to fully evaluate the site, refine the Hazard Ranking System (HRS) score, and fulfill HRS package and documentation requirements.

#### 3.0 SITE BACKGROUND

#### 3.1 Site Description

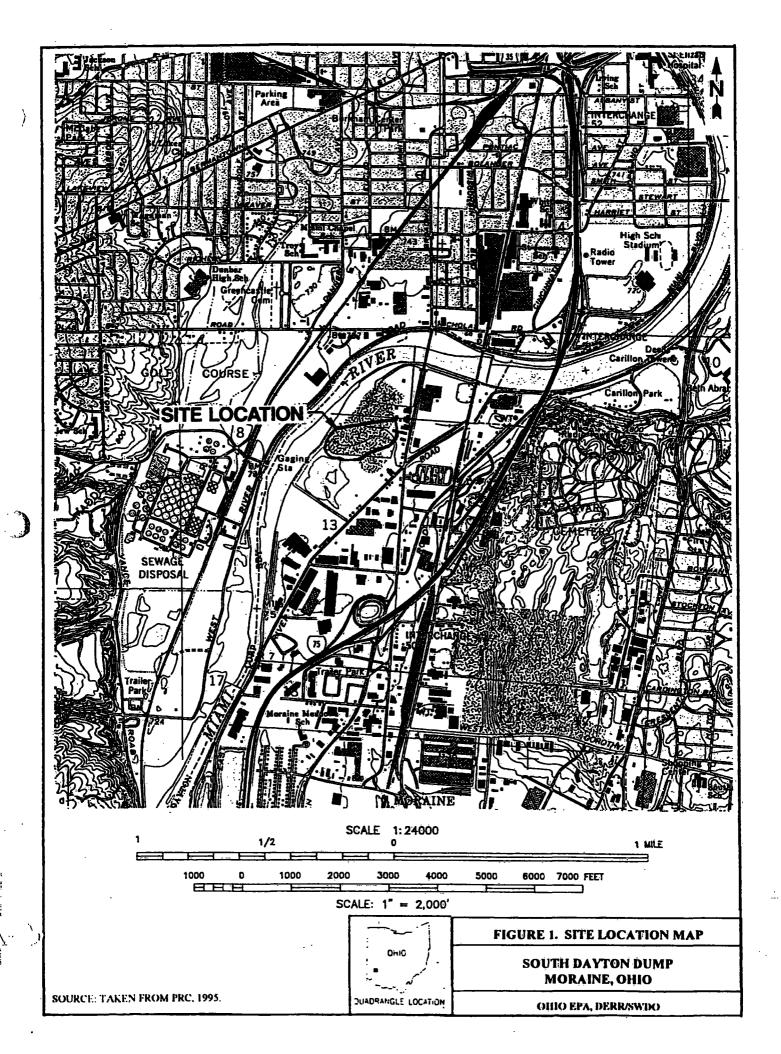
The South Dayton Dump and Landfill, located at 1976 Dryden Road in a heavily industrialized and commercial part of Moraine, Ohio (Figure 1), closed in early 1996. The property occupied by the landfill is owned by the estate of Cyril Grillot and Kathryn Boesch. The site occupies about 30 acres of a 40-acre parcel of land. Of the northern 10 acres of the 40-acre parcel, 8 acres was leased to a former auto salvage yard until 1994 and is now vacant except for an asphalt pile, and about 2 acres is leased to a small fabricating company (PRC Environmental Management, Inc. [PRC], 1995).

The nearest residences to the former landfill are located in a trailer park about 0.25 mile southeast of the site. The site is bordered on the north by a former auto salvage yard, an asphalt plant and asphalt storage pile, and light industrial facilities; on the east by Dryden Road and light industrial facilities; on the south by a pallet manufacturing and repair company and a gravel pit filled with water; and on the west by a flat, grassy area with a bicycle trail and through which runs the Great Miami River. A tree-lined, manmade levee constructed of fill material separates the site from this grassy area. The grassy area between the site and the Great Miami River is approximately 350 feet wide and is in the 100-year flood plain; the flood plain is owned by the Miami Conservancy District. A federally designated wetland also exists on the site (U.S. Department of the Interior, 1988; Ecology and Environment, Inc. 100-year flood, 1995).

The topography of the site is fairly level except for a depression area toward the west end of the dump and a dry ravine along the southeast border. In addition, the topography gently slopes downward from the boundary of the site toward the grassy area on the west and the gravel pit on the south (PRC, 1995).

An unpaved access road extends along the site's north boundary and curves around to the southwest portion of the site (see Figure 2). Stacks of wooden pallets, piles of concrete, discarded 55-gallon drums, wood and metal debris, and mounds of fly ash have been observed along this access road. An abandoned air curtain destructor is also situated along the northern access road in the northwest corner of the site, and there is a 35- by 100-foot concrete pad located just east of the air curtain destructor. E&E, during a screening site inspection (SSI) conducted in 1991, obtained an organic vapor analyzer (OVA) reading that deviated from background near the opening of the air curtain destructor. The depression area mentioned earlier is located directly south of the air curtain destructor, it has an approximately seven-foot drop around its perimeter (E&E, 1991; PRC, 1995): Standing water has been observed in this depression area during various site visits by U.S.EPA and Ohio EPA personnel. During Ohio EPA site visits in August of 1995 and May of 1996, both which occurred after lengthy periods of rain, this depression area was completely filled with standing water.

Another dirt road extends south from the north access road across the center of the site before turning to the east and extending along the ravine back to the area of the site entrance. A large, open shallow depression filled with demolition debris, consisting mostly of piles of concrete blocks, separates the large depression area in the western portion of the site from the center dirt road to the east. According to E&E, it appeared that this shallow depression was once a gravel pit converted for landfill use. E&E observed several mounds of soil and ash east of the center dirt road (E&E, 1991).



NW-102 € CREAT MICHAIN PRICES MW-101 - WW-101A ACCESS ROAD \*SPHALT DRYDEN ROAD SITE NAME: SOUTH DAYTON DUMP
MORAINE, MONTGOMERY COUNTY, OHIO
FIG.2 SITE FEATURES MAP SCALE: 1"-200" DATE: 12/2/96 POWERLINE TOWER
OHIO EPA MONITORING WELL LOCATION LEGEND

During a site reconnaissance performed by PRC in December of 1994, the central portion of the site appeared to be the only area of active dumping. Active dumping at the site ceased in early 1996, after the death of the landfill's operator, Alcine Grillot. As observed during an Ohio EPA site visit on March 17, 1995, the locked entrance gate restricts site access at this location; however, a portion of the site is not fenced and it can be easily accessed. In addition, trespassing does occur at the site. In the past, graffiti was found on heavy machinery at the site, suggesting trespassing, although Grillot, who began operating the dump in 1950, stated that the trespassing was an isolated incident. During Phase I activities at the site in February of 1996, however, one of the trucks was vandalized.

#### 3.2 Previous Site Work

Adveliminary Assessment (PA) of the South Dayton Dump and Landfill conducted by Chical Pasing 1985 concluded the presence of hazardous chemicals that had been documented at the site posed a threat to ground water because the sand and gravel aquifer underlying the site provides easy access for contaminants to leach into the aquifer. The PA also concluded that there is potential for the Great Miami River to be polluted because the ground-water flow is to the west, toward the river. Ohio EPA rated the site as a high priority site for both state and federal action. Because witnessess observed chemical and hazardous wastes being deposited in the landfill, Ohio EPA recommended a U.S. EPA Field Investigation Team (FIT) investigation consisting of the installation of monitoring wells (Ohio EPA, 1985).

During their SSI-of-the landfills conducted in SSI-of-the locations burface soil samples and had them analyzed for ICL compounds and TAI- analytes. These samples were obtained from various locations throughout the site, including near the air curtain destructor and piles of soil, ash, and wood and concrete debris; next to a 55-gallon drum; and in the two large depression areas. Analysis of these samples showed volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and metals at concentrations significantly above background levels. Several polynuclear aromatic hydrocarbons (PAHs) also were detected in some of the soil samples; in addition to past disposal practices at the site, the presence of PAHs can be attributed to the nearby asphalt plant and pile (E&E, 1991).

PRE-performed a Focused Site Inspection Prioritization First the State of the State

Based on PRC's recommendation of the EPA send letted a STEP inventigation of the former South Daytone Dumprand Landfollow higher countries and supplies of the EPA sealing and PSARA Technologies a fact an electronic posterior and supplies a

detected very low levels of these compounds; none were detected above their Maximum Contaminant Levels (MCLs).

Initially, Ohio EPA planned to base the locations of monitoring wells on the ground-water analytical results; however, since the results exhibited little difference in the number of VOCs detected and their relative concentrations, monitoring well locations were selected based on the historical ground-water flow direction (west/southwest) and on ease of access. PSARA installed the amandoring wells in Aprile 1996 in deputs ranging from 30 feet to 35 feet, with the soleoned intervals encompassing the bottom 10 feet of each well. One of the wells was installed at the southern edge of the site, and the other two were installed west of the site, in the flood plain of the Great Miami River. For a background well, Ohio EPA used a monitoring well located on the Dayton Power and Light property, east of the site across Dryden Road. See Appendix A, PSARA's Installation of Groundwater Monitoring Wells at the South Dayton Dump, Moraine, Ohio, for more detailed information on Phase I of the STEP investigation. Ohio EPA personnel conducted Phase II of the STEP investigation on July 9, 1996 which consisted of the collection of soil, ground water, and sediment sampless the argults of this aphase of the investigation are documented in this report.

#### 3.3 Site History

The South Dayton Dump and Landfill began accepting wastes in 1941 and operated as a licensed sanitary landfill until 1986. From 1986 until it closed in early 1996, it accepted construction and demolition debris. Before 1970, the primary disposal practice at the site was the open burning of materials, mostly vegetation and wood wastes. Landfilling was a secondary disposal practice. Between 1950 and 1970, drummed wastes were occasionally accepted at the site, the drums were emptied of their contents and either buried or sold to drum recyclers. Because records of these activities were not kept details regarding where the drum contents were 2 is 55 cd. in 1955, and diagrams are not kept details regarding where the drum contents were 2 is 55 cd. in 1955, and diagrams are not kept details regarding where the drum contents were 2 is 55 cd. in 1955. Ind.

During the Ohio EPA site visit in August of 1995, Alcine Grillot claimed that only a few drums were disposed at the site over the years. Montgomery County Health District photographs taken in 1969 and 1970, however, depict drums and huming drums. Furthermore, inspections conducted by Ohio EPA in 1985 as part of its PA of the site found many drums and barrels of chemicals. And, in addition to E&E observing drums during its 1991 SSI, PRC during its site reconnaissance in 1994 noted evidence of several drums, some of which were empty and some that still held their nonliquid contents (PRC, 1995). Ohio EPA personnel also observed drums scattered throughout the site during their site visits in March and August of 1995.

Because of legislation prohibiting open burning, this practice ceased at the site in 1970. At this time, Alcine Grillot formed Moraine Recycling, Inc. (MRI), which operated on the site. MRI developed and constructed a furnace-like device, called an "air curtain destructor," to burn vegetation and wood, wastes. According to the Montgomery County Combined General Health District (MCCGHD), this device was not an incinerator but rather a "controlled open burning device;" and it was to be operated under a special open burning permit. The Montgomery County Health Department (MCHD) acknowledged MRI's permit application for the air curtain destructor and recommended starting up the device as soon as possible for experimental shakedown. During this period, operation of the device was covered by open burning permits. After the permit applications were submitted, several trial

burns of the device were initiated. Because the Ohio Department of Health never granted final approval of the permit, however, the project was abandoned (E&E, 1991; PRC, 1995).

From June 4, 1973, to July 5, 1976, two Hobart Corporation plants in Dayton sent waste to the site. During this time period, Hobart generated, combined, and shipped about 825 gallons of waste per month. This waste was combined in single 55-gallon drums and consisted of the following: 1,1,1-trichloroethane and cutting oil from degreasing; paint waste with 2-butanone and xylene; Stoddard solvent and cutting oil from degreasing; and machine tool water-based synthetic coolants contaminated with cutting oils and solvents (Ohio EPA, 1984). Approximately 15 drums per month may have been disposed at the site. In May of 1978, MCCGHD and Ohio EPA inspected the site and noted several problems, including the presence of containers labeled "hazardous," unsatisfactory on-site compaction and filling, and a lack of at least two feet of cover soil that would support vegetation (Ohio EPA, 1985).

A Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Notification of Hazardous Waste Site Form submitted by Industrial Waste Disposal Company, Inc. (IWD) provides further evidence that hazardous wastes were disposed at the site Submitted on June 9, 1981, this notification indicates that the site had been used as a disposal facility for the industrial and municipal wastes of IWD's customers; however, it does not include information concerning quantities of wastes, specific types of wastes, or dates of disposal (E&E, 1991; PRC, 1995).

Until its closure in early 1996, the South Dayton Dump and Landfill operated under a solid waste disposal permit issued by MCHD, which allowed disposal of solid, inert, insoluble materials, such as unregulated foundry sand, slag glass and demolition debris. No liner apparently existed at the site. According to Alcine Grillot, the operator of the site, the dump's only customer was the General Motors Corporation Delco-Moraine Plant (GMC), which is located about 0.5 mile northeast of the site. The GMC wastes disposed at the site primarily included wooden pallets, concrete, and scrap wood (E&E, 1991, PRC, 1995).

#### 3.4 Site Geology and Hydrogeology

The South Dayton Dump and Landfill site is located in the Till Plains section of the Central Lowlands physiographic province. With an elevation of about 730 feet above sea level, the topography of the site is fairly level, except for a depression toward the west end of the dump and a dry ravine along the southeast border. In addition, the topography gently slopes downward from the boundary of the site toward the grassy area on the west and the gravel pit on the south. According to the Soil Survey of Montgomery County, the site occupies an area designated as "gravel pit," defined as open excavations from which sand and gravel have been removed and the upper soil layers have been stripped away (Soil and Conservation Service, 1976).

The site, which is located in a secondary designated wellhead protection area, is underlain by unconsolidated glacial outwash deposits of the Great Miami Aquifer. This aquifer is the only production aquifer in Montgomery County; it has a high yield with a capacity of several thousand gallons per minute and almost all the water consumed in the county comes from this aquifer. The unconsolidated glacial deposits consist of 25 to 250 feet of poorly sorted clay, silt, sand, and gravel, which overlie Ordovician-aged interbedded shales and limestones of the Richmond Group. The bedrock occurs at depths of about 180 to 240 feet below the ground surface. The shales and

limestones in the bedrock are relatively impermeable in comparison to the sand and gravel aquifers and, thus, the bedrock units are not considered important sources of ground water (Ohio EPA, 1990; Geraghty & Miller, Inc. [G&M], 1991; PRC, 1995).

According to the Ground Water Resources Map of Montgomery County, the site lies in an area where permeable sand and gravel deposits beneath the floodplain of the Great Miami River may yield 500 to 1000, or more, gallons per minute (gpm) of ground water. Wells constructed in these deposits yield in excess of 1000 gpm at depths ranging from 85 feet to as much as 185 feet (Ohio Department of Natural Resources, 1986).

In most places around the Dayton area, the unconsolidated glacial outwash deposits of the Great Miami Aquifer are separated into an upper and lower aquifer by locally discontinuous silt and clay units, or till zones. The upper aquifer is generally 30 to 70 feet thick, contains minor, shallow till lenses, and is under water-table conditions. Locally, recharge from the upper aquifer to the lower aquifer can be relatively rapid where the till layer is absent, but regionally, the till layer provides an effective barrier that results in the lower aquifer being semiconfined. The till zone overlies up to 150 feet of sand and gravel that comprise the lower aquifer, which is a fully saturated semiconfined aquifer throughout most of the Dayton area. Locations exist, however, where the till is thin and discontinuous. In areas where the till is absent, the upper and lower aquifers respond as one hydrogeologic unit. The lower aquifer is underlain by a basal till or the Ordovician-aged bedrock deposits (Ohio EPA, 1990; G&M, 1991).

Well logs for wells within 0.5 mile of the site indicate the subsurface geology near the site is highly variable, even within short distances; and consist of gravel and sand and gravel with layers of till that occur in varying thicknesses and at greatly different depths. In Dayon Power and Light wells, located east across Dryden Road from the site, glacial till layers were encountered at depths ranging from a few feet below ground surface (bgs) to 78 feet to 168 feet bgs. The thicknesses of these till layers varied from 2 feet to 32 feet, and some of the wells contained up to five separate layers of till. In 4 wells located south and southeast of the site, till was present at the ground surface down to depths ranging from 4 feet to 15 feet bgs. In 3 of these wells, the till layers were followed by gravel deposits down to depths of as much as 130 feet bgs. The fourth well contained gravel interspersed with deposits of clay and sand. Two wells directly south of the site had sand and gravel deposts with till layers ranging from 23 feet to 42 feet thick at depths of 15 feet bgs and 22 feet bgs, respectively. One of these wells contained another till layer, 9 feet thick, at a depth of 48 feet bgs.

The boring logs for the exploratory soil borings drilled during Phase I of this STEP investigation of the former landfill indicate the subsurface geology beneath the site is fairly uniform. Fill comprised variously of asphalt, brick, glass, cinders, slag, ash, burnt wood and wood fragments, concrete, black sand, and other assorted debris, including a plastic bag, was encountered in all the exploratory borings. In one boring on the northwestern pontion of the site, fill was found from the ground surface down to 12 feet in depth, while in the remaining borings, it was encountered from the ground surface generally to depths of 4 to 6 feet. The geology below the fill consists chiefly of clay, ranging in thickness from 2 to 14 feet, which is underlain by primarily sand. The clay contains varying mixtures and amounts of silt, sand, gravel, and limestone fragments and is interspersed with a few thin layers of sand deposits. The sand contains varying mixtures and amounts of clay, silt, gravel, and cobbles, and in one boring, has a thin layer of clay. In three borings on the southern and western portions of the site, the sand contained occasional layers of sand and gravel deposits, or just gravel deposits, beginning at depths ranging from 14 feet to 18 feet bgs. See Appendix A, PSARA's Installation of Groundwater

Monitoring Wells at the South Dayton Dump, Moraine, Ohio, for more information on the subsurface geology at the site.

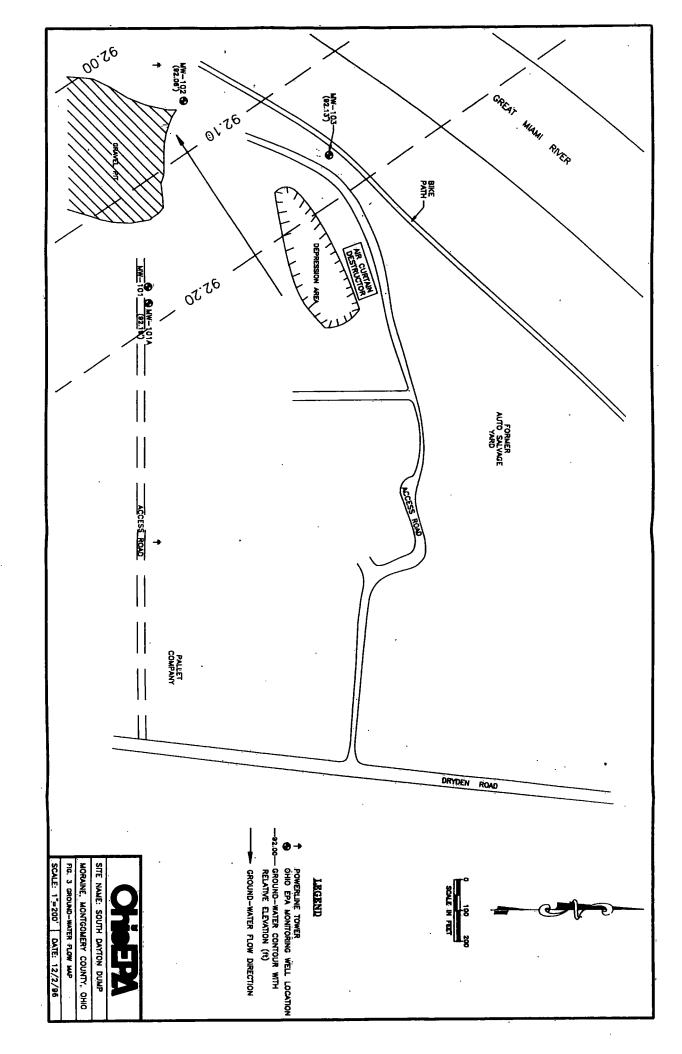
Seasonal variations exist in the recharge to the ground-water supplies of the Dayton area; this recharge occurs principally between late fall and early spring. Natural recharge from precipitation is known to cause increases in the elevation of the water table in the general area of the site (MVRPC, 1982). During Ohio EPA site visits in August of 1995 and May of 1996, both which occurred after lengthy periods of rain, the depression area at the site was completely filled with standing water, which reflects the increases in the elevation of the water table during these times. During installation of the temporary borings for Phase I of the Ohio EPA STEP investigation, the depth to ground water ranged from 12 feet beneath the southern portion of the site to 18 feet beneath the western portion (see Appendix A).

The direction of ground-water flow in the area of the site is believed to be influenced by topography and the Great Miami River, as ground water in the region generally flows southwest toward the river (Spieker, 1968; MVRPC, 1982; PRC, 1995). In the area of the site, the direction of ground-water flow is likely to be to the west, toward the Great Miami River. Because the river may act as a recharge and discharge zone in the site area, ground-water flow may also be influenced by the river's southerly flow, which may cause the ground-water flow direction to be more to the west-southwest. Additionally, based on the observations of PRC during their 1994 site reconnaissance, ground water may be discharging to the water-filled gravel pit that is located immediately southwest of and adjacent to the site (PRC, 1995). The direction of ground-water flow during Phase I of the STEP investigation, however, was to the southeast, with a hydraulic gradient of 0.002 (see Appendix A). During Phase II sampling activities, the direction of ground-water flow was to the southwest, with a hydraulic gradient of 0.027 (see Figure 3).

Few measurements of hydraulic parameters exist for the upper aquifer unit of the Great Miami Aquifer; the upper aquifer saturated thickness is typically less than 30 feet and is rarely used as a ground-water supply. G&M performed aquifer tests on the upper aquifer near the Harrison Radiator site, which is about two miles south of the site, and obtained values for hydraulic conductivity in the range of 1504 to 2008 feet/day. Hydraulic conductivity tests performed on the lower aquifer in the area of the site had results ranging from 214 to 436 feet/day (G&M, 1990, 1993).

The vertical hydraulic conductivity of the till zone in the Dayton area has been estimated from both field and laboratory tests. G&M reported vertical hydraulic conductivity estimates for the till zone at Harrison Radiator ranging between 0.012 and 3.31 feet/day, with a median value of 0.02 feet/day. An aquifer pumping test at the Dryden North wellfield, which is approximately three miles southwest of the site, yielded a vertical hydraulic conductivity estimate of 0.055 feet/day (G&M, 1990, 1993).

The primary water supplier in Montgomery County is the city of Dayton. The city maintains two wellfields with a total of 100 production wells; the wellfields are located over 5 miles from the site. These wells pump an average of 82 million gallons per day (gpd) of water to supply about 420,000 people. The city of Moraine receives its water from Montgomery County, which receives its water from the city of Dayton (PRC, 1995). The city of West Carrollton's wellfield, located just over four miles southwest of the site, supplies a population of about 10,000 people (Ohio EPA, 1996c).



One community within four miles of the site currently uses ground water from the Great Miami Aquifer. The city of Oakwood maintains two wellfields, located about two miles east of the site, which supply a population of 9500 people. Montgomery County has four wellfields located about three miles south, southeast, and southwest of the site. Two of the wellfields, Lamme Road and Dryden Road North, are located two-and-a-half miles south-southeast and about three miles south-southwest of the site, respectively, and the other two, Dryden Road South and Miami Shores, are located about three miles south-southwest of the site. Currently, the Lamme Road wellfield has been abandoned, the two Dryden Road wellfields are off-line, and the Miami Shores wellfield, last used in 1989, is maintained as a standby wellfield. If the Miami Shores wellfield were to be used, it would supply a population of 150,000 people. Although both Dryden Road wellfields are off-line, both have shown contamination and their future is uncertain (Ohio EPA, 1995, 1996a, 1996c).

Most water supplies within four miles of the site are provided by public sources. Recent data from the Montgomery County Division of Environmental Health file, however, indicate that about six residential wells are known to still be in use for drinking; these wells are located about three miles southwest of the site, across the Great Miami River (Ohio EPA, 1996d). Entities that reportedly also use wells for drinking water include the following: Cain's Mobile Home Court, located about 1.8 miles southeast of the site, whose well supplies 120 people; the Miami Valley Hunt and Polo Club, which is approximately 2.5 miles southeast of the site and whose well supplies 200; the GM-Delphi plant, located 0.75 miles northeast of the site; and Carillon Cafeteria, about 1.4 miles southeast of the site. In addition, many area companies use ground water for various industrial purposes (Ohio EPA, 1996a, 1996c).

#### 4.0 SAMPLING LOCATIONS & PROCEDURES

Soil, sediment, and ground-water samples were collected during Phase II of the STEP investigation performed at the former South Dayton Dump and Landfill on July 9, 1996. Figure 4 illustrates the sampling locations, and Appendix B contains a photographic log of these locations.

Standard Quality Assurance and Quality Control (QA/QC) procedures for STEP field activities were followed during the investigation. These procedures, including sample collection, packaging and shipping, and equipment decontamination, are documented in the Ohio EPA Field Standard Operating Procedures and the Quality Assurance Project Plan (QAPP) for Region V Superfund Site Inspection Activities for Ohio EPA.

#### 4.1 Soil Sample Locations

Ten soil samples were collected and analyzed to characterize and identify contamination at the South Dayton Dump and Landfill. The samples were collected to determine the potential for direct exposure of contaminants to the public, to determine whether contaminants in the surface and subsurface soil are migrating to ground water, and to identify all possible source areas. The soil samples were chosen based on historical information, field observations, including the appearance of soil, and photoionization detector (PID) readings. In addition, a duplicate soil sample and a background soil sample were collected. All the soil samples were collected using stainless steel spoons and pans. See Figure 4 for the soil sampling locations.

Sample #96-DV-03-S01 was collected from a depth of 4 to 4.5 feet near the former drum area in the north-central portion of the site. Sample #96-DV-03-S02 was obtained from the surface of the north-south access road, in the approximate center of the site, where the sampling team observed light gray soil, with a blue, very fine powdery substance, that did not appear to be indigenous. Sample #96-DV-03-S03 was collected from the depression area on the western portion of the site from a depth of 18 to 26 inches, south of and below the concrete pad and former air curtain destructor. A duplicate sample, #96-DV-03-D03, was also collected from this location. Sample #96-DV-03-S04 was obtained east of the depression area from black, very granular soil containing cinders; it was collected from a depth of 18 to 26 inches.

Sample #96-DV-03-S05 was obtained from the location of Phase I exploratory boring SD-004, along the access road on the western portion of the site, from a depth of 5 feet. Sample #96-DV-03-S06 was collected from the west-central portion of the site, in a vegetated area between the piles of concrete blocks and the depression area; this sampling interval, 18 to 28 inches in depth, was characterized by discolored soil mixed with ash and cinders. Sample #96-DV-03-S08 was collected from the steep western slope (levee) that leads to the Great Miami River flood plain, immediately below a broken drum containing a hard green product; it was collected from a depth of 2 to 3 inches. Sample #96-DV-03-S09, which was also obtained from this western slope, was collected from a depth of 3 to 6 inches, immediately below four rusty and empty drums. Sample #96-DV-03-S10 was collected from a depth of 0 to 4 inches from an area of drums found in the depression area below the former air curtain destructor. Sample #96-DV-03-S11 was obtained from a depth of 3 to 4 inches from an east-west trending ravine on the southeast side of the site. A background soil sample, #96-DV-03-S07, was collected from a location on the southwest side of the water-filled gravel pit that

borders the site on the southwest (see Figure 5). It was obtained from a depth of 0 to 2 inches.

#### 4.2 Sediment Sample Locations

Six sediment samples were collected during this STEP investigation, including a duplicate sample. Two samples, #96-DV-03-S15 and #96-DV-03-S16, were collected from the water-filled gravel pit that borders the site on the southwest. Both samples were obtained from a depth of 15 to 18 feet below the water surface using an Eckman Dredge. Sample #96-DV-03-S15 was collected from the northwest portion of the pit, and #96-DV-03-S16 was obtained near a sand and gravel outcrop on the northeast bank of the pit, approximately 200 feet southeast of an electric tower. A background sample was not collected due to the lack of a suitable sampling location.

Four sediment samples, including a background sample, were collected from the Great Miami River, located about 350 feet west of the site. Sample #96-DV-03-S17 was obtained from a location in the river in line with the approximate center of the site; a duplicate sample (#96-DV-03-S17) was also collected from this location. Sample #96-DV-03-S18 was collected downstream of the site, to the south, and sample #96-DV-03-S19 was collected from an upstream location, thus serving as the background sample. These sediment samples were collected using stainless steel spoons and pans.

#### 4.3 Ground-water Sample Locations

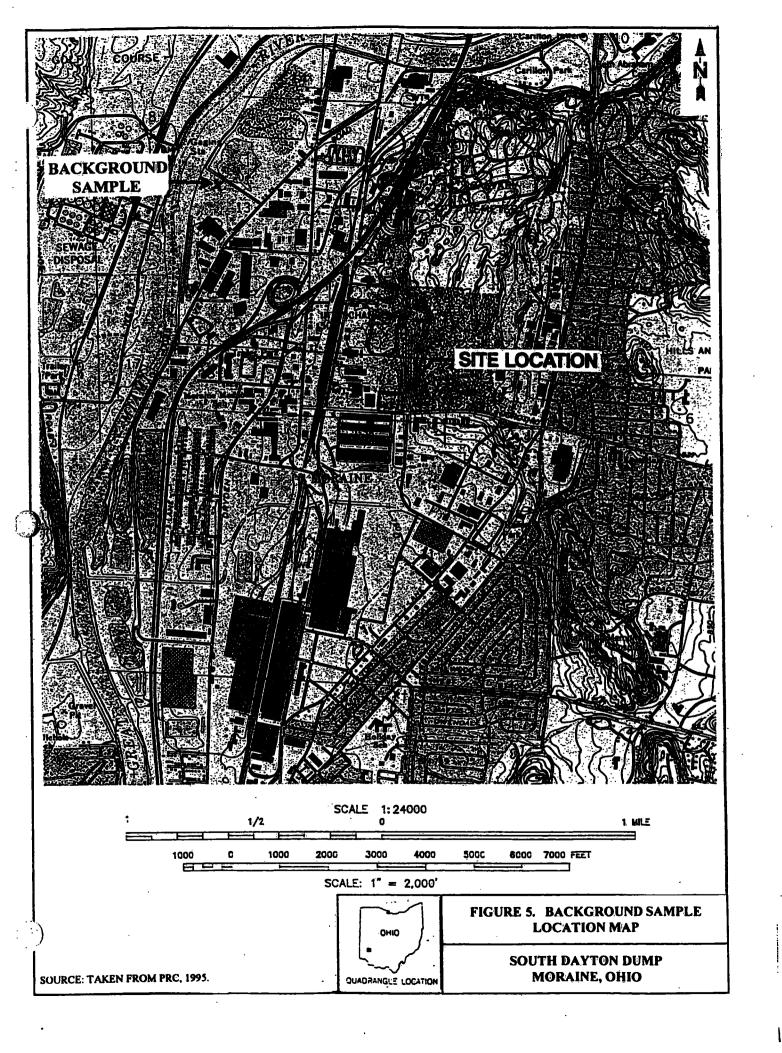
Ohio EPA sampled ground water from four monitoring wells to determine if the former landfill is contributing to ground-water contamination. Three ground-water samples were collected from the monitoring wells installed as part of this STEP investigation: MW-101 (#96-DV-03-S23), located along the access road on the southwestern portion of the site, and MW-102 (#96-DV-04-S25) and MW-3 (#96-DV-04-S24), both located on the flood plain, adjacent to the bicycle trail, immediately southwest and west of the site, respectively. A fourth ground water sample (#96-DV-04-S22) was collected from a monitoring well on Dayton Power and Light Company property, east of the site across Dryden Road, which is located in the historically upgradient location. This well was intended as a background well and was designated as MW-104 by Ohio EPA. A duplicate ground-water sample was obtained from MW-101 (#96-DV-04-D23). The ground-water samples were collected with disposable, pre-cleaned Teflon bailers after the monitoring wells were properly purged. See Figure 4 for the monitoring well locations.

#### 4.4. Surface Water Sample Locations

No surface water samples were collected for analysis as part of this STEP investigation.

#### 4.5 Air Sample Locations

No air samples were collected as part of this investigation. Air monitoring was conducted during installation of the soil borings and monitoring wells during Phase I of the investigation.



#### 5.0 DISCUSSION OF ANALYTICAL RESULTS

The soil, sediment, and ground-water samples were supposed to be sent to a Contract Laboratory Program (CLP) laboratory for analysis; however, due to a miscommunication between U.S. EPA and Ohio EPA, the samples were inadvertently sent to a U.S. EPA Region V Central Regional Laboratory (CRL). The samples were eventually redirected to a CLP laboratory for analysis of target compound list (TCL) substances; which include VOCs, semivolatile compounds (SVOCs), pesticides, and PCBs, and for target analyte list (TAL) metals.

The complete analytical results of this investigation are contained in Appendix C. Significant analytical results based on these data are presented in Tables 1, 2, and 3. A significant analytical result is defined as a contaminant level that exceeds both the Contract Required Quantitation Limit (CRQL) for a target compound, or Contract Required Detection Limit (CRDL) for a target analyte, and three times the relevant background sample concentration. The analytical data were reviewed by U.S. EPA Region V personnel for compliance with the CLP and validated by Region V Central Regional Laboratory staff.

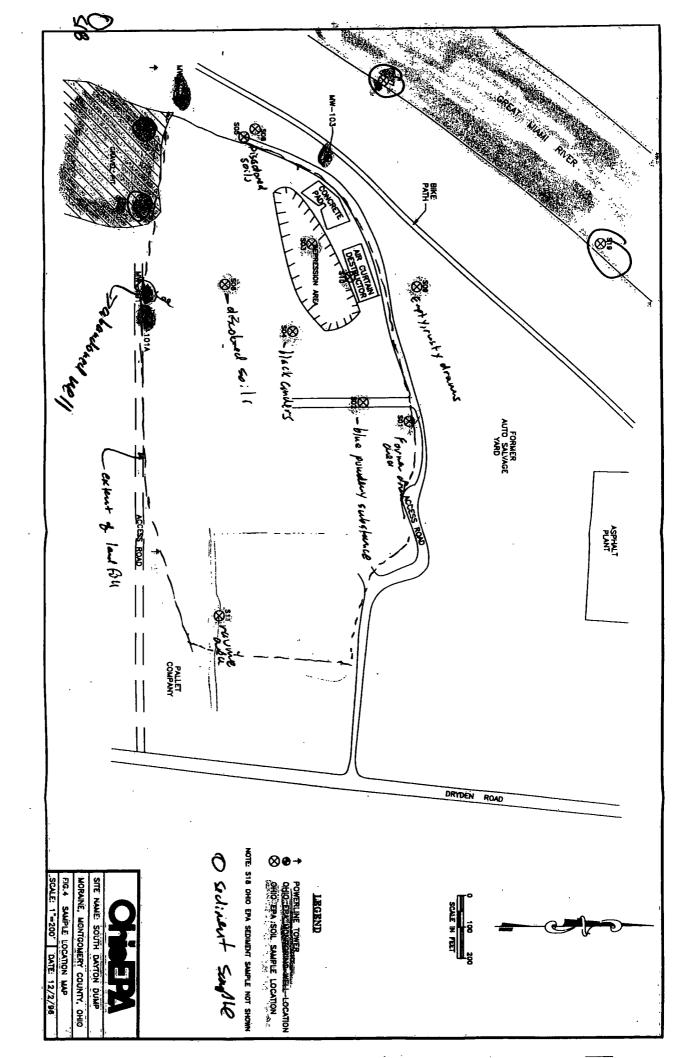
#### 5.1 Soil Samples

The soil sampling locations are illustrated in Figure 4, and significant analytical results are presented in Table 1. A variety of contaminants were detected in the soil samples at significant levels. It should be noted that the background sample contained SVOCs, pesticides, TAL metals, and cyanide

Three VOCs were detected in significant amounts in only three samples. Methylene chloride was found in soil sample #96-DV-03-S08 at a level of 16 ug/kg. This sample was collected from a depth of 2 to 3 inches from the western slope of the site, immediately below a broken drum that contained a hard green product. Sample #96-DV-03-S10, which was obtained at a depth of 0 to 4 inches from an area of buried drums below the former air curtain destructor in the depression area, contained 11 ug/kg of trichloroethene. Tetrachloroethene was detected in sample #96-DV-03-S01 at a level of 59 ug/kg. This sample was collected from a depth of 4 to 4.5 feet near the former drum area in the north-central portion of the site.

Significant levels of SVOCs were detected in soil samples #96-DV-03-S04, #96-DV-03-S08, #96-DV-03-S09, and #96-DV-03-S11. Samples #96-DV-03-S08 and #96-DV-03-S11 contained virtually the same SVOCs; and both had the greatest number of these contaminants. The location of sample #96-DV-03-S08 has been described above, and sample #96-DV-03-S11 was obtained from the ravine on the southeast side of the site from a depth of 3 to 4 inches. The SVOCs detected in samples #96-DV-03-S08 and #96-DV-03-S11, and the concentrations in these samples, respectively, are as follows: fluoranthene; 2000 ug/kg and 1300 ug/kg; pyrene; 1900 ug/kg and 1600 ug/kg; phenanthrene; 1700 ug/kg and 570 ug/kg; chrysene, 1200 ug/kg and 1000 ug/kg; benzo(a)anthracene; 1100 ug/kg and 920 ug/kg; benzo(b)fluoranthene; 1000 ug/kg and 1300 ug/kg; benzo(k)fluoranthene; 950 ug/kg and 920 ug/kg; benzo(a)pyrene, 820 ug/kg and 1000 ug/kg, and indeno(1,2,3-cd)pyrene, 480 ug/kg and 910 ug/kg. Sample #96-DV-03-S08 also contained 390 ug/kg of 2-methylnaphthalene; and sample #96-DV-03-S11 had 450 ug/kg of dibenzo(a,h)anthracene.

Soil sample #96-DV-03-S09, which was collected from a depth of 3 to 6 inches from the western



## Table 1: Sampling Results

·		96-DV-03- S01	96-DV-03- S02	96-DV-03- S03	96-DV-03- D03	96-DV-03- \$04	96-DV-03- \$05	96-DV-03- .S06	96-DV-03- S07	96-DV- 03-S08	96-DV-03- S09
DATE SAMPLE COLLECTED		7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96
TIME SAMPLE COLLECTED		10:10	11:40	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH		4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5.5	18"-28"	0-2"	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)		Prun Area	Auc foudler	Ar Curtain	Field Duplicate	Black Cindes		Discolored	Background	Discolored	Empt + Drus
COMPOUND DETECTED (µg/kg)				MESTAVE OF			21103	Coi S		50,17	Area
VOLATILE ORGANIC COMPOUNDS	CROL		4.		是是,但少			المالية		The state of	
methylene chloride	10 μg/kg	12JBU	16BU	12JBÜ	12JBU	16JBU	12JBU	16JBU	11JBU	16	11JBU
trichloroethene	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	110	110
tetrachloroethene	10 μg/kg	59	10U	12U	12U	16U	12U	16U	11 <b>U</b>	11U	110
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL				un gregoria	عثاله والمحتمد علامت بريانا والم	स्तुत्रका निकास सुर्वे व्यास	A Same Control of the		ann n ad matekil yöselt ava	
2-methylnaphthalene		410U	340U	410U	410U	77J	380U	530U	380U	390	401
phenanthrene	330 μg/kg	410U	340U	33J		170J	2:1J				49J
di-n-butylphthalate	330 μg/kg	410U 410U	18J	410U	34J 27J	28J	380U	530U	63J	1700 370U	180J
fluoranthene	330 μg/kg	410U	21J	410U 410U	410U	140J	380U 31J	31J 530U	28J 110J		1500
	330 μg/kg	410U	20J			L	30J			2000	340J
pyrene	330 μg/kg	410U	25J	410U 410U	410U	160J		530U	130J	1900	320J
butylbenzylphthalate	330 μg/kg		340U		33J	520U	380U	530U	26J	370U	18000E
benzo(a)anthracene	330 μg/kg	410U 410U		410U	410U	41J	380U	530U	58J	1100	180J
chrysene	330 μg/kg		340U	21J	25J	56J	27J	530U	83J	1200	320J
bis(2-ethylhexyl)phthalate	330 μg/kg	24J	33J	410U	410U	540	380U	530U	32J	230J	2100
benzo(b)fluoranthene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	1000	320J
benzo(k)fluoranthene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	950	200J
benzo(a)pyrene	330 μg/kg	410U	340Ü	410U	410U	520U	380U	530U	62J	820	110J
indeno(1,2,3-cd)pyrene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	48J	480	120J
dibenzo(a,h)anthracene	330 µg/kg	410U	340U	410U	410U	<b>520</b> U	380U	530U	380U	310J	350U
PESTICIDES/PCBs	CROL					Syntamore, Services principality		granica manifest in the			
gamma-BHC (Lindane)	1.7 µg/kg	2.1Ü	1. <b>8</b> U	2.1U	2.1U	2.6U	2.0U	2.7U	1.9U	1.8J	1.8Ú
endosulfan II	3.3 μg/kg	4.1U	3.4U	4.1U	4.1U	5.2U	3.8U	5.3U	1.4J	5.4	3.5U
4,4-DDD	3.3 μg/kg	4.1U	3.4U	4.1U	4.1U	5.2U	3.8U	5.3U	0.65J	3.7U	3.5U
4,4-DDT	3.3 μg/kg	0.60PJ	3.4U	4.1U	4.1U	5.2U	0.71PJ	5.3U	1.6PJ	8.8P	3.5U
endrin ketone	3.3 µg/kg	4.1U	3.4U	4.1U	4.1U	5.2U	3.8U	5.3U	3.8U	3.7U	3.5U
alpha-chlordane	1.7 μg/kg	2.1U	1.8U	2.1U	2.1U	5.4P	2.0U	2.7U	1.9U	1.9⊍	1.8U
gamma-chlordane	1.7 μg/kg	2.1U	0.35PJ	2.1U	0.96PJ	4.3	2.0U	2.7U	1.9∪	1.9U	1.8U
aroclor-1254	33 μg/kg	41Ü	34U	41U	41U	52U	38U	53U	38U	37U	830
aroclor-1254	33 μg/kg	41U	34U	41U	41U	52U	38U	53U	38U	37U	1200
	27 NO.75	710	٠,٠	71.0	710	720	200		200	3,0	1200

rante r. non dambing izeanis

		96-DV-03-	96-DV-03-		
		S10	SII		
DATE SAMPLE COLLECTED		7/09/96	7/09/96		
TIME SAMPLE COLLECTED		17:20	17:00		
SAMPLE DEPTH		0-4"	3-4"		
QA/QC DESCRIPTION (if applicable)		Air Cartem	Gras		
		Distructor	Draw Area		
COMPOUND DETECTED (µg/kg)	·				
VOLATILE ORGANIC COMPOUNDS	CROL	A. 6 . 4 . 6			
methylene chloride	10 µg/kg	12JBU	17BU		
trichloroethene	10 μg/kg	11J	110		
tetrachloroethene	10 μg/kg	12U	110		
					·
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL				
2-methylnaphthalene	330 μg/kg	46J	74J		
phenanthrene	330 μg/kg	100J	570		
di-n-butylphthalate	330 μg/kg	35J	360U		
fluoranthene	330 μg/kg	100J	1300		
pyrene	330 μg/kg	120J	1600		
butylbenzylphthalate	330 μg/kg	613	360U		s com to
benzo(a)anthracene	330 μg/kg	51J	950		
chrysene	330 μg/kg	93J	1000		
bis(2-ethylhexyl)phthalate	330 μg/kg	72J	120J		
benzo(b)fluoranthene	330 μg/kg	79J	1300		
benzo(k)fluoranthene	330 μg/kg	73J	920		
benzo(a)pyrene	330 μg/kg	400U	1000		
indeno(1,2,3-cd)pyrene	330 μg/kg	400U	910		
dibenzo(a,h)anthracene	330 µg/kg	400U	450	S. A.	
PESTICIDES/PCBs	CRQL				
gamma-BHC (Lindane)	1.7 μg/kg	0.77PJ	0.42J		
endosulfan II	3.3 μg/kg	4.0U	3.6U		
4,4-DDD	3.3 μg/kg	4.0U	4.4		
4,4-DDT	3.3 μg/kg	4.0U	3.6U		
endrin ketone	3.3 μg/kg	4.0U	7.5P		
alpha-chlordane	1.7 µg/kg	2.1U	1. <b>8</b> U		
gamma-chlordane	1.7 µg/kg	. 2.1U	2.3P		22.3
aroclor-1254	33 μg/kg	170P	36U		
aroclor-1260	33 μg/kg	40U	36U		

Table 1: Sampling Results

	96-DV-03- S01	96-DV-03- S02	96-DV-03- S03	96-DV-03- D03	96-DV-03- \$04	96-DV-03- S05	96-DV-03- S06	96-DV-03- \$07	96-DV 03-S08	96-DV-03- SO
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96
TIME SAMPLE COLLECTED	10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH	4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"	<b>32-3</b> "-	. 10.00
QA/QC DESCRIPTION (if applicable)				Field Duplicate				Background		

TAL METALS/CYANIDE (mg/kg)	CRDL										
antimony	12 mg/kg	0.75U	0.70B	0.74U	0.90U	1.0B	3.5B	1.0U	0.68U	278	2.9B
arsenic	2 mg/kg	20.7	402a	1.6B	1.2U	27.0	12.2	4	6.0	1	36.0
barium	40 mg/kg	182	272	12.2B	7.2B	222	268	320	112	9000	
beryllium	1 mg/kg	2.0	A 1000	0.25U	0.30U	3.1	0.68B	3.3	0.62B	0.77B	2.6
cadmium	l mg/kg	0.47B	6.6	0.43B	0.30U	0.38B	0.23U	0.33U	0.57B	0.69B	3.9
calcium	1000 mg/kg	4060	5650	995B	979B	16400	25500	2280	12900	5410	19800
chromium	2 mg/kg	5.5	23.6	17.6	8.5	14.0	12.6	16.5	17.3	62.0	50.7
copper	5 mg/kg	26.8	91.8	136	96,9	73.0	18.3	41.5	22.5	1830	1680
iron	20 mg/kg	3240	9430	24200	15900	5890	19200	3120	13200	59500	13800
lead	0.6 mg/kg	29.9	110	15.4	7.2	97.0	16.8	18.2	31.5		
magnesium	1000 mg/kg	1010B	1480	565B	560B	8070	13200	596B	6100	2480	18200
nickel	8 mg/kg	10.4	34.6	18.7	11.3B	20.0	15.1	16.6	12.9	78.3	85.0
selenium	l mg/kg	1.3	8.8	0.99U	1.2U	6.3	0.93U	8.6	0.90U	2.1	2.8
silver	2 mg/kg	0.25U	0.21U	0.25U	0.30U	0.28U	0.23U	0.33U	0.45B	0.23B	0.90B
vanadium	10 mg/kg	18.3	92.6	1.2B	0.62B	47.7	24.0	61.9	17.4	18.5	33.6
zinc	4 mg/kg	33.7	39.4	41.7	22.3	231	60.9	48.0	76.9	286	291
cyanide	2 mg/kg	0.27B	0.26B	0.19U	0.22U	0.34B	0.17U	0.29B	0.30B	2.3	3.7

# ranie 1: Suit Sampling Kesuits

<u> </u>			The state of the s		
	96-DV-03- \$10	96-DV-03- \$11		· 有工作的 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
DATE SAMPLE COLLECTED	7/09/96	7/09/96			And the second s
TIME SAMPLE COLLECTED	17:20	17:00			사용 등학생 (기원 등학생 기계
SAMPLE DEPTH	<b>*0-4</b> "	3-4"			
QA/QC DESCRIPTION (if applicable)					

TAL METALS/CYANIDE	CRDL			
antimony	12 mg/kg	8.4B	2.1B	
arsenic	2 mg/kg	15.4	6.6	
barium	40 mg/kg	318	93.8	
beryllium	1 mg/kg	1.9	1.1B	
cadmium	1 mg/kg	16.3	1.4	
calcium	1000 mg/kg	48800	98000	
chromium	2 mg/kg	43.2	18.7	- [1] 15 12 12 12 12 12 12 12 12 12 12 12 12 12
copper	5 mg/kg	191000	405	· · · · · · · · · · · · · · · · · · ·
iron	20 mg/kg	92300	16000	
lead	0.6 mg/kg	#2100-	242	
magnesium	1000 mg/kg		36200	
nickel	8 mg/kg	139	24.2	
selenium	1 mg/kg	2.6	0.93B	
silver	2 mg/kg	7.6	0.22U	
vanadium	10 mg/kg	28.1	15.6	
zinc	4 mg/kg		159	
cyanide	2 mg/kg	0.60B	0.55	

Table 2: Sediment Sampling Results

SAMPLE NUMBERS	96-DV-03- S15	96-DV-03- \$16	96-DV-03- \$17	96-DV-03- D17	96-DV-03- S18	96-DV-03- S19	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45	
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6"	0-6"	0-6"	
QA/QC DESCRIPTION (if applicable)				Field Duplicate		Background	

COMPOUND DETECTED (µg/kg)										-1.0	
PESTICIDES/PCBs	CRQL	¥.				en e	ener with its property.				
endrin	3.3 μg/kg	34	9.4U	3.4JP	4.8P	2.4JP	6.0U	epi ve.			
endosulfan sulfate	3.3 μg/kg	3.7JP	9.4U	5.0U	4.6U	3.0JP	6.0U				
methoxychlor	17 μg/kg	18J	17JP	50	65	8.9JP	12JP		(		
endrin aldehyde	3.3 μg/kg	7.9JP	9.4U	5.0U	4.6U	5.8U	6.0U	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )			
aroclor-1254	33 μg/kg	660	94U	50U	46U	58U	60U				

ANALYTE DETECTED (mg/kg)									
TAL METALS/CYANIDE	CRDL							THE SECTION	
mercury	0.1 mg/kg	0.08U	0.12U	0.63	0.65	0.09U	0.13B		

			·					
SAMPLE NUMBERS		96-DV-03- S22	96-DV-03- S23	96-DV-03- D23	96-DV-03- S24	96-DV-03- S25		
DATE SAMPLE COLLECTED		7/09/96	7/09/96	7/09/96	7/09/96	7/09/96		
TIME SAMPLE COLLECTED		9:50	10:50	10:50	13:55	14:30		
MONITORING WELL NUMBER		MW-104	5.MW 101	MW.IOID	-₹MW/103	MW 102		
QA/QC DESCRIPTION (if applicable)		Background		Field Duplicate				eriginali de la composition della composition de
COMPOUND DETECTED (µg/L)			<u></u>					
VOLATILE ORGANIC COMPOUNDS	CROL	Maria 1980		And the second				
chloroethane	10 μg/L	10U	2J	10U	10U	22		
acetone	10 μg/L	10U	30	29	10U	10U		
1,1-dichloroethane	10 μg/L	10U	13	13	10U	10U		
1,2-dichloroethene (total)	10 μg/L	10U	150	140	10U	10Ų		
toluene	10 μg/L	10U	10U	IJ	10U	15		5 - John Miller, St. 1985 - 1994 - 1995 - 1994 - 1994 - 1995 - 1995 - 1995 1984 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995
	T 455.		Application of the second of t		o management of the second second	grading the sales of the sales		
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL							
phenol	10 μg/L	10U	130EB	10U	10U	10U		
PESTICIDES/PCBs	CROL							
heptachlor	0.05 μg/L	0.050U	0.051PJ	.0082PJ	.0095PJ	.0092PJ		
TAL METALS/CYANIDE	CRDL					Participant	7	
potassium	5000 μg/L	9570	39600	114000	2720B	3390B		

Ez concentrations exceed culibration range of 60/ms

Bz compound detected in blank

slope below the location of four rusty and empty drums, had the highest level of a SVOC detected in any of the soil samples. It contained 18,000 ug/kg of butylbenzylphthalate, in addition to 1500 ug/kg of di-n-butylphthalate, 2100 ug/kg of bis(2-ethylhexyl)phthalate, and 340 ug/kg of fluoranthene. Sample #96-DV-03-S04 had 540 ug/kg of bis(2-ethylhexyl)phthalate; it was collected east of the depression area from black, very granular soil containing cinders, from a depth of 18 to 26 inches.

Significant levels of pesticides were detected in soil samples #96-DV-03-S04, #96-DV-03-S08, and #96-DV-03-S11. Sample #96-DV-03-S11 contained the greatest number of these contaminants, as follows: endrin ketone, 7.5 ug/kg; 4,4-DDD, 4.4 ug/kg; and gamma-chlordane, 2.3 ug/kg. Sample #96-DV-03-S08, with 8.8 ug/kg of 4,4-DDT, had the highest concentration of any pesticide; it also contained 5.4 ug/kg of endosulfan II and 1.8 ug/kg of gamma-BHC. Sample #96-DV-03-S04 contained 5.4 ug/kg of alpha-chlordane and 4.3 ug/kg of gamma-chlordane.

Only samples #96-DV-03-S09 and #96-DV-03-S10 had significant concentrations of PCBs. Sample #96-DV-03-S09 contained the highest levels of PCBs, with 1200 ug/kg of aroclor-1260 and 830 ug/kg of aroclor-1254. Sample #96-DV-03-S10 contained aroclor-1254 at a concentration of 170 ug/kg.

TAL metals were detected at significant levels in all the soil samples except sample #96-DV-03-S05. Samples #96-DV-03-S08, #96-DV-03-S09, and #96-DV-03-S10 contained the greatest number of TAL metals and, for the most part, the highest concentrations of these contaminants. Sample #96-DV-03-S10 contained the highest levels of copper, at 191,000 mg/kg; iron, at 92,300 mg/kg; lead, at 12,100 mg/kg; zinc, at 11,500 mg/kg; nickel, at 139 mg/kg; and cadmium, at 16.3 mg/kg. It was the only sample in which silver was detected at a significant level of 7.6 mg/kg. This sample also contained 48,800 mg/kg of calcium, 2.6 mg/kg of selenium, and 1.9 mg/kg of beryllium. Sample #96-DV-03-S08 had the highest levels of arsenic, at 141 mg/kg, and barium, at 13,000 mg/kg. It was the only soil sample in which antimony and chromium were detected at significant concentrations of 278 mg/kg and 62 mg/kg, respectively. This sample also contained 59,500 mg/kg of iron, 1830 mg/kg of copper, 652 mg/kg of lead, 286 mg/kg of zinc, 78.3 mg/kg of nickel, and 2.1 mg/kg of selenium. Sample #96-DV-03-S09 had 1990 mg/kg of lead, 1680 mg/kg of copper, 291 mg/kg of zinc, 824 mg/kg of barium, 85 mg/kg of nickel, and 36 mg/kg of arsenic. It also contained beryllium, cadmium, and selenium.

Sample #96-DV-03-S02 contained the highest levels of vanadium, at 92.6 mg/kg, selenium, at 8.8 mg/kg, and beryllium, at 5.8 mg/kg. It also had 77.2 mg/kg of arsenic, in addition to copper, lead, and cadmium. This sample was collected from the surface of the north-south access road in the approximate center of the site, where the sampling team observed an area of light gray soil, with a blue, very fine powdery substance, that did not appear to be indigenous.

Other soil sampling results of note include the presence of significant levels of arsenic in samples #96-DV-03-S01, #96-DV-03-S04, and #96-DV-03-S06 at concentrations ranging from 20.7 mg/kg to 49.7 mg/kg. Additionally, sample #96-DV-03-S11 contained the highest level of calcium, at 98,000 mg/kg, the only significant occurrence of magnesium, at 36,200 mg/kg, and a lead content of 242 mg/kg.

Two soil samples contained cyanide at significant levels; these were the only samples in which this contaminant was detected. Sample #96-DV-03-S09 had a concentration of 3.7 mg/kg, and sample #96-DV-03-S08 contained 2.3 mg/kg.

#### 5.2 Sediment Samples

Significant analytical results for the sediment samples are presented in Table 2, and the sampling locations are illustrated in Figure 4. Because there was no background sample for the sediment samples obtained from the water-filled gravel pit, Ohio EPA used the river background sample to evaluate the significance of their analytical results.

No VOCs, SVOCs, or TAL metals were detected in any of the gravel pit sediment samples. Pesticides and the PCB, aroclor-1254, were found in sample #96-DV-03-S15, the only sediment sample collected from the gravel pit that contained significant levels of contaminants. This sample, which was obtained from the northwestern part of the pit, had 660 ug/kg of aroclor-1254, 34 ug/kg of endrin, 7.9 ug/kg of endrin aldehyde and 3.7 ug/kg of endosulfan sulfate.

No VOCs, SVOCs, or PCBs were detected in any of the sediment samples obtained from the Great Miami River. Pesticides and mercury were found in sample #96-DV-03-S17 and its duplicate, #96-DV-03-D17, the only river sediment samples that contained significant levels of contaminants. These samples were collected from a location in the river in line with the approximate center of the site. Samples #96-DV-03-S17 and #96-DV-03-D17 contained, respectively, 50 ug/kg and 65 ug/kg of methoxychlor, 3.4 ug/kg and 4.8 ug/kg of endrin, and 0.63 and 0.65 mg/kg of mercury.

#### 5.3 Ground-water Samples

Significant ground-water analytical results are presented in Table 3, and the locations of the monitoring wells from which the samples were collected are illustrated in Figure 4. It should be noted that the background sample (#96\*DV-03-S22, collected from MW-104) contained TAL metals.

Significant levels of VOCs were detected in samples #96-DV-03-S23, #96-DV-03-D23, and #96-DV-03-S25. Sample #96-DV-03-S24, collected from MW-103, did not have any significant concentrations of contaminants. Sample #96-DV-03-S23 contained 150 ug/L of 1,2-dichloroethene (total), 30 ug/L of acetone, and 13 ug/L of 1,1-dichloroethane. Its duplicate, #96-DV-03-D23, had virtually the same concentrations of these contaminants. These samples were collected from MW-101, located along the access road on the southwestern portion of the site. Sample #96-DV-03-S25 contained 22 ug/L of chloroethane and 15 ug/L of toluene. This sample was collected from MW-102, which is located on the flood plain, immediately southwest of the site.

Sample #96-DV-03-S23 was the only ground-water sample that contained any significant levels of SVOCs, pesticides, and TAL metals. It had 130 ug/L of phenol, 0.051 ug/L of heptachlor, and 39,600 ug/L of potassium. The duplicate of this sample, #96-DV-03-D23, contained 114,000 ug/L of potassium.

#### 6.0 MIGRATION PATHWAYS

#### 6.1 Soil Exposure Pathway

The former South Dayton Dump and Landfill is located in an industrial area. The analytical results demonstrate that on-site soil contains VOCs, SVOCs, pesticides, PCBs, TAL metals, and cyanide. This contamination exists in surficial soil and in soil as deep as 4.5 feet.

VOCs were detected in only three samples collected from geographically different areas of the site. Sample #96-DV-03-S01, obtained from a depth of 4 to 4.5 feet near the former drum area in the north-central portion of the site, contained 59 ug/kg of tetrachloroethene. Sample #96-DV-03-S08, collected at a depth of 2 to 3 inches from the western slope of the site, had 16 ug/kg of methylene chloride. Sample #96-DV-03-S10, obtained from a depth of 0 to 4 inches from an area of buried drums below the former air curtain destructor in the depression area, contained 11 ug/kg of trichloroethene.

SVOC contamination was mostly limited to two areas of the site; the western slone from which samples #96-DV-03-S08 and #96-DV-03-S09 were collected, and the rayine on the southeast portion of the site, from which sample #96-DV-03-S11 was obtained. These samples were all collected from shallow depths ranging from 2 to 6 inches. Samples #96-DV-03-S08 and #96-DV-03-S11 contained virtually the same SVOCs, and both had the greatest number of these contaminants. The SVOCs detected in samples #96-DV-03-S08 and #96-DV-03-S11, and the concentrations in these samples, respectively, are as follows: fluoranthene, 2000 ug/kg and 1300 ug/kg; pyrene, 1900 ug/kg and 1600 ug/kg; phenanthrene, 1700 ug/kg and 570 ug/kg; chrysene, 1200 ug/kg and 1000 ug/kg; benzo(a)anthracene, 1100 ug/kg and 950 ug/kg; benzo(b)fluoranthene, 1000 ug/kg and 1300 ug/kg; benzo(k)fluoranthene, 950 ug/kg and 920 ug/kg; benzo(a)pyrene, 820 ug/kg and 1000 ug/kg; and indeno(1,2,3-cd)pyrene, 480 ug/kg and 910 ug/kg. Sample #96-DV-03-09 had the highest level of an SVOC detected in any of the soil samples. It contained 18,000 ug/kg of butylbenzylphthalate, in addition to 1500 ug/kg of di-n-butylphthalate, 2100 ug/kg of bis(2-ethylhexyl)phthalate, and 340 ug/kg of fluoranthene. Set 100-set 110 samples. It contained 18,000 ug/kg of butylbenzylphthalate, and 340 ug/kg of fluoranthene. Set 100-set 110 samples are polynuclear aromatic hydrocarbons (PAHs) and 110 sam

Samples #96-DV-03-S08 and #96-DV-03-S11, which contained the highest number of SVOCs, also had significant levels of pesticides. Sample #96-DV-03-S11 contained the greatest number of these contaminants, as follows: endrin ketone, 7.5 ug/kg; 4,4-DDD, 4.4 ug/kg; and gamma-chlordane, 2.3 ug/kg. Sample #96-DV-03-S08, with 8.8 ug/kg of 4,4-DDT, had the highest concentration of any pesticide and also contained 5.4 ug/kg of endosulfan II and 1.8 ug/kg of gamma-BHC.

Sample #96-DV-03-09; which contained the highest level of an SVOC detected in any of the soil samples, also had the highest levels of PCBs: It contained 1200 ug/kg of aroclor-1260 and 830 ug/kg of aroclor-1254.

All the soil samples, except for one, had significant levels of TAL metals. Samples #96-DV-03-S08, #96-DV-03-S09, and #96-DV-03-S10 contained the greatest number of TAL metals and, for the most part, the highest concentrations of these contaminants. Samples #96-DV-03-S08 and #96-DV-03-S09 were collected from the western slope of the site, as mentioned previously, and sample #96-DV-03-

S10 was obtained from a depth of 0 to 4 inches from an area of drums found in the depression area below the former air curtain destructor. The latter sample contained the highest levels of copper, at 191,000 mg/kg; iron, at 92,300 mg/kg; lead, at 12,100 mg/kg; zinc, at 11,500 mg/kg; nickel, at 139 mg/kg; and cadmium, at 16.3 mg/kg. Sample #96-DV-03-S08 had the highest levels of arsenic, at 141 mg/kg, and barium, at 13,000 mg/kg, and also contained 59,500 mg/kg of iron, 1830 mg/kg of copper, 652 mg/kg of lead, 286 mg/kg of zinc, 78.3 mg/kg of nickel, and 2.1 mg/kg of selenium. Sample #96-DV-03-S09 had 1990 mg/kg of lead, 1680 mg/kg of copper, 291 mg/kg of zinc, 824 mg/kg of barium, 85 mg/kg of nickel, and 36 mg/kg of arsenic.

Other soil sampling results of note include the presence of significant levels of arsenic in samples #96-DV-03-S01, #96-DV-03-S02, #96-DV-03-S04, and #96-DV-03-S06 at concentrations ranging from 20.7-mg/kg to 77.2 mg/kg. Two soil samples contained cyanide at significant levels; these were the only samples in which this contaminant was detected. Sample #96-DV-03-S09 had a concentration of 3.7 mg/kg, and sample #96-DV-03-S08 contained 2.3 mg/kg.

Access to the site is more or less unrestricted. The western fence is not maintained, and no barriers to access exist from either the north or the south. Incidents of vandalism and trespassing have occurred in the past at the site. The surrounding population, therefore, can easily come into contact with contaminated soil. The site varies from being well vegetated to lacking vegetation. No workers are employed on the site, no residences are located within 200 feet of the site, and the population within a quarter-mile of the site is 17 (Ohio EPA, 1990b). No day care facilities or schools are located within 200 feet of the documented areas of soil contamination (Ohio Department of Natural Resources, 1996). One federally designated wetland lies within the boundaries of the site (U.S. Department of Interior, 1988).

#### 6.2 Ground-water Pathway

It should be noted that the background sample (#96-DV-03-S22, collected from MW-104) contained TAL metals. The analytical results demonstrate that significant levels of VOCS, phenol, and heptachlor were detected in sample #96-DV-03-S23, which was collected from MW-101, located on the southwestern portion of the site. This sample contained 150 ug/L of 1,2-dichloroethene (total), 30 ug/L of acetone, and 13 ug/L of 1,1-dichloroethane. Its duplicate, #96-DV-03-D23, had virtually the same concentrations of VOCs. Sample #96-DV-03-S23 also had 130 ug/L of phenol and 0.051 ug/L of heptachlor.

Sample #96-DV-03-S25 was the only other ground-water sample in which VOCs were detected; it did not contain significant levels of any other contaminants. This sample contained 22 ug/L of chloroethane and 15 ug/L of toluene and was collected from MW-102, which is located on the flood plain of the Great Miami River immediately southwest of the site.

Ground water obtained from the Great Miami Aquifer is the major source of drinking water in the area. One community within four miles of the site currently uses ground water from the Great Miami Aquifer. The city of Oakwood maintains two wellfields, located between just over two miles northeast of the site, which supplies a population of 9500 people (Ohio EPA, 1996c). Additional wellfields are located within four miles of the site. Montgomery County has four wellfields located about three miles south, southeast, and southwest of the site. Three of these wellfields are either abandoned or off-line due to contamination problems, and one is being maintained on standby status (Ohio EPA,

1995, 1996a, 1996c). The standby wellfield, if it were to be used, would supply a population of 150,000 people; however, its Wellhead Protection Area is not large enough to encompass the site (Ohio EPA, 1996a, 1996c).

Most water supplies within four miles of the site are provided by public sources. Recent data from the Montgomery County Division of Environmental Health file, however, indicate that about six residential wells are known to still be in use for drinking; these wells are located about three miles southwest of the site, across the Great Miami River (Ohio EPA, 1996d). Entities that reportedly also use wells for drinking water include the following: Cain's Mobile Home Court, located about 1.8 miles southeast of the site, whose well supplies 120 people; the Miami Valley Hunt and Polo Club, which is approximately 2.5 miles southeast of the site and whose well supplies 200; the GM-Delphi plant, located 0.75 miles northeast of the site; and Carillon Cafeteria, about 1.4 miles southeast of the site (Ohio EPA, 1996a, 1996c).

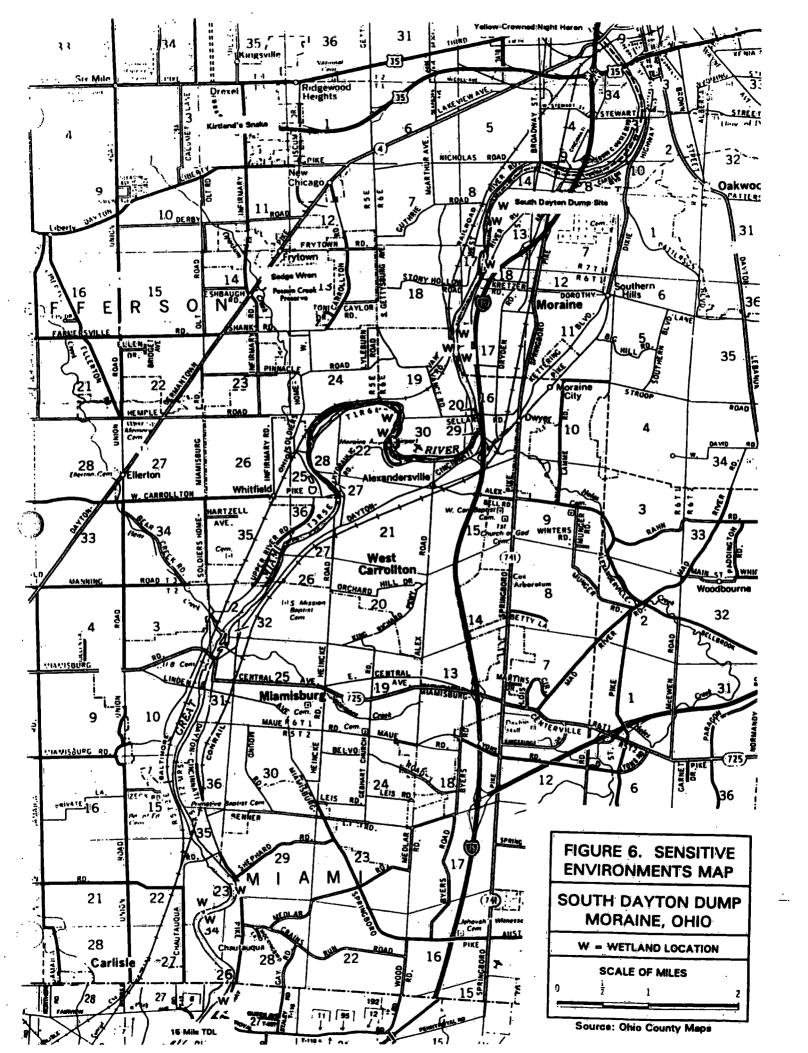
It is difficult to judge whether on-site contaminants have migrated from the former landfill to the surrounding wellfields. The site is located in an industrial area, and ground-water contamination problems are well documented in this area.

#### 6.3 Surface Water Pathway

No surface water samples were collected. The possibility does exist, however, for a release from ground water to surface water and for overland flow of storm water from the site to the nearby surface water bodies. According to Alcine Grillot, the previous operator of the landfill, the site has experienced flooding from the Great Miami River in the past. The closest surface water body is the water-filled gravel pit, located at the southwestern corner of the site. The Great Miami River is located about 350 feet west of the site, separated only by a flood plain.

The Ohio Water Quality Standards (OAC 3745-1-21) designate the Great Miami River as a Warm Water Habitat. The river is also designated as an agricultural and industrial water supply, as well as a primary contact recreation water body. It is used for recreation and fishing (Ohio EPA, 1996b). Based on the most recent creel survey (1989) from the Ohio Department of Natural Resources Division of Wildlife, a total of approximately 4170 fish were harvested for human consumption from the two locations closest to the site. The Ohio Department of Health has issued a fish consumption advisory for bottom feeding fish in the Great Miami River from Dayton down to the Ohio River (Ohio EPA, 1996e). The Kirtland Snake, a proposed federally endangered or threatened species, exists within four miles of the site, as do two state-endangered species, the Sedge Wren and the Yellow-Crowned Night-Heron (Ohio EPA, 1996f). Approximately 1.7 miles of federally designated wetland area frontage is located within 15 miles downstream of the site; this includes the wetland area on the site (U.S. Department of the Interior, 1988). See Figure 6 for a map depicting the sensitive environments within a 15-mile target distance limit of the site.

The analytical results demonstrate that pesticides and the PCB, aroclor-1254, are present in the sediment samples collected from the water-filled gravel pit, and that pesticides and mercury are present in the samples obtained from the Great Miami River. The possibility does exist for the contaminants in the sediment to impact surface water quality.



Sample #96-DV-03-S15 was the only sediment sample collected from the gravel pit that contained significant levels of contaminants. It was obtained from the northwestern part of the pit and had 660 ug/kg of aroclor-1254, 34 ug/kg of endrin, 7.9 ug/kg of endrin aldehyde, and 3.7 ug/kg of endosulfan sulfate.

Sample #96-DV-03-S17 and its duplicate, #96-DV-03-D17, were the only river sediment samples that contained significant levels of contaminants. They were collected from a location in the river in line with the approximate center of the site. Samples #96-DV-03-S17 and #96-DV-03-D17 contained, respectively, 50 ug/kg and 65 ug/kg of methoxychlor, 3.4 ug/kg and 4.8 ug/kg of endrin, and 0.63 and 0.65 mg/kg of mercury.

#### 6.4 Air Pathway

The air pathway was not evaluated, and no samples were collected for analysis. Visual and physical evidence at the site, however, indicates a potential for contaminants to be released to the atmosphere. Most of the site is well vegetated, but areas of stressed vegetation and areas devoid of vegetation exist, particularly around the area of demolition debris. Ash and/or foundry sand is visible on the surface of the site in isolated spots. Wind dispersion of particulate matter is possible. Evidence of biogas release exists from the PID/FID readings taken during the STEP investigation. According to the 1990 Census, the estimated population within a four-mile radius of the site is 80,864 (Ohio EPA, 1990b). A four-mile radius map is contained in Appendix D.

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# APPENDIX A:

PSARA TECHNOLOGIES, INC.

INSTALLATION OF GROUNDWATER
MONITORING WELLS AT THE
SOUTH DAYTON DUMP, MORAINE, OHIO



INSTALLATION OF GROUNDWATER
MONITORING WELLS AT THE
SOUTH DAYTON DUMP, MORAINE, OHIO

**MOBILIZATION ORDER NO. 557-01** 

# INSTALLATION OF GROUNDWATER MONITORING WELLS AT THE SOUTH DAYTON DUMP, MORAINE, OHIO

# **MOBILIZATION ORDER NO. 557-01**

# Submitted to:

Ohio Environmental Protection Agency
Division of Emergency and Remedial Response
Southwest District Office
401 E. Fifth Street
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Prepared by:

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> June 1996 Project No. 60003.06

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# 1.0 INTRODUCTION

The South Dayton Dump (also referred to as the South Dayton Landfill or Moraine Recycling) is a 30-acre site located just south of Dayton, Ohio. Figure 1 presents a portion of a U. S. Geological Survey (USGS) topographic map of South Dayton showing the location of the site.

A previous investigation conducted at the South Dayton Dump determined that volatile organic compounds (VOCs) and metals are present in soils at levels above background. The OEPA is performing Site Team Evaluations and Prioritizations (STEPs) at the site pursuant to a Cooperative Agreement with the U.S. Environmental Protection Agency (USEPA). The OEPA, Southwest District Office, issued Mobilization Order No. 557-01 to PSARA Technologies, Inc., under a current level-of-effort (LOE) contract to install exploratory soil borings and groundwater monitoring wells at the site. The primary work product of the mobilization order was the installation of four monitoring wells, which will be used by OEPA to evaluate groundwater quality at the site.

As originally issued, the objectives of the mobilization order were to delineate the extent of the fill at the site and to install groundwater monitoring wells outside the extent of fill material but still within the estimated groundwater contaminant plume. Tasks proposed to define the extent of fill material (geophysical survey) were subsequently deleted from the Scope of Work due to budget limitations, and the final scope was reduced to installation of the four monitoring wells for OEPA use. Exploratory borings were conducted prior to installing the wells to provide information on the extent of fill, soil geology, and hydrogeology so that the wells could be placed in locations that would meet OEPA needs.

The work was conducted in accordance with previously submitted and approved documents including the following:

- Final Work Plan (PSARA 1996a)
- Site-specific Quality Assurance Project Plan (QAPP) (PSARA 1996b)
- Site-specific Health and Safety Plan (HASP) (PSARA 1996c)
- Site-specific Sampling and Analysis Plan (SAP, included in the QAPP)
- Generic QAPP for the LOE contract (PSARA 1993)

This report describes the activities surrounding the installation of the groundwater monitoring wells at the South Dayton Dump Site and the associated findings. Section 2 describes the site investigation activities, including a review of existing information and aerial photographs, installation and sampling of the exploratory borings, and installation of the monitoring wells. Section 3 presents a summary of the findings. Section 4 briefly describes variances from the approved Work Plan. Finally, Section 5 presents references.

# 2.0 SITE INVESTIGATION

# 2.1 HISTORICAL REVIEW

The South Dayton Dump is approximately a 30-acre site located at 1976 Springboro Road in Moraine, Ohio. It began accepting wastes in 1941 and operated as a licensed sanitary landfill until 1986. The South Dayton Dump accepted construction and demolition debris until it closed in early 1996.

According to Schmidt, 1986, the site overlies glacial outwash comprising mainly sand and gravel. Groundwater in the vicinity of the site flows west/southwest toward the Great Miami River. The depth to groundwater is approximately 20 to 45 feet below ground surface. The Great Miami River is located about 350 feet west of the site, and a water-filled gravel pit borders the site on its southwest side. A small wetland also exists on site.

OEPA files indicate that the South Dayton Dump accepted wastes including 1,1,1-trichloroethane; 2-butanone; xylenes; cutting oils; paint; Stoddard solvents; machine tool water-based coolants contaminated with cutting oils and solvents; and other unspecified cleaning solvents. During routine inspections, it was documented that containers labeled "hazardous" were discovered on site. Between 1950 and 1970, drummed wastes were occasionally accepted at the site. Photographs of the site from 1968 and 1973 show drums; drums were also seen during OEPA site visits in March and August of 1995.

Eleven soil samples collected at or near the site during a previous investigation found levels of contaminants significantly above background, with some concentrations above risk-based levels. The following contaminants were detected above background in soil samples: 1,2-dichloroethene, tetrachloroethene, toluene, polychlorinated biphenyls (PCBs), antimony, arsenic, barium, cadmium, chromium, copper, mercury, nickel, lead, zinc, and several polynuclear aromatic hydrocarbons (PAHs). Prior to the activities described in this report, no groundwater, surface water, or air samples had been collected at the site.

# 2.2 REVIEW OF AERIAL PHOTOGRAPHS

PSARA reviewed historical low-altitude aerial photographs of the site vicinity obtained by OEPA from the Ohio Department of Transportation. The aerial photographs, which were taken in 1956, 1959, 1968, and 1973, document the progression of the site from rural, undeveloped land through an extensive sand and gravel mining operation and ultimately to landfilling operations.

The site expanded from north to south throughout the time period represented by the aerial photographs. There area north of the site appears to have accepted some type of industrial waste prior to 1956. That northern parcel of land is now occupied by an active asphalt plant.

Sand and gravel were removed from the site to the top of the groundwater table. Local ponds were visible throughout the site in each of the aerial photographs reviewed. Debris of undetermined origin and type was then used to backfill the excavations created from sand mining operations. Stockpiled drums, pallets, and crates are visible in the 1968 photograph.

An automobile salvage yard occupied the area immediately north of the site in the 1968 photograph. All automobiles were gone from the site by the time the 1973 photograph was taken.

PSARA used the aerial photographs to estimate the maximum extent of the landfilling operations. The landfilling operations appear to have been limited to an area of approximately 30 acres. The western boundary is marked by a treeline and ridgeline that parallels the Great Miami River. The area encompassing the landfill is approximately 12 feet higher than the flood plain of the river. The southern extent of the fill is roughly marked by an access road in an easement for high-tension overhead electrical lines. The eastern limit of the fill is unclear but is estimated to be 350 feet west of Dryden Road. (There are reports that fill material actually extends beneath Dryden Road. No evidence of this exists on the aerial photographs, however.) The northern boundary of the site, though likely not the boundary of the fill, parallels a northern boundary of the site, delineated in the field by a tree line.

Access to the site is gained through an east-west access road from Dryden Road.

Figure 2 presents a site map, which was developed from the 1973 aerial photograph. The scale of the photograph was determined by measuring the lengths of features near the center of the photo and comparing them to the actual measured lengths of the same features.

# 2.3 EXPLORATORY BORINGS

PSARA installed seven exploratory borings at the site between February 19 and 26, 1996. Data collected from the exploratory borings were ultimately used to optimize the placement of the groundwater monitoring wells.

The locations of the exploratory borings were determined based on information gathered from the aerial photographs and on accessibility. Based on general knowledge of the regional geology, it was assumed groundwater generally flowed toward the Great Miami River. Consequently, the borings were concentrated along the southern and western boundaries of the site. Two borings labeled SD-001 and SD-002, were installed along a power line right-of-way at the southern border of the site. Due to access limitations, the remaining borings (SD-003 through SD-007) were installed within the boundaries of the landfill-along the western treeline. Figure 3 illustrates the exploratory boring locations, and the Soil Boring Logs are presented in Appendix A. Well borings that had to be abandoned are designated on the boring logs by letters; these letters chronologically identify the number of borings attempted before one was successfully completed.

# 2.3.1 Soil Sampling

Prior to the installation of any soil borings, PSARA contacted the Ohio Utilities Protection Service (OUPS) to have member utilities mark any underground lines.

All drilling was conducted in Modified Level D personal protective equipment in accordance with the site-specific HASP. Ambient air monitoring for oxygen, explosivity, and VOCs was conducted throughout the duration of drilling activities.

The exploratory borings were installed and sampled using a combination of direct-push and traditional auger and split-spoon techniques. As originally stated in the Work Plan, all of the borings were to be installed and sampled using a direct-push technique called the ESP<sup>TM</sup> Method by the manufacturer. The ESP<sup>TM</sup> system utilizes a double-cased system,

which includes a 1.25-inch split spoon driven in front of an outer hollow steel drive casing. When used to collect soil samples, the entire assembly is driven through the sampling interval. The split spoon is retrieved by extracting the inner rods, leaving the outer drive casing in place. The split spoon is then reinserted through the casing, and the process is repeated until the boring is complete.

Site conditions, however, prevented the exclusive use of this technique. Extremely well compacted silty sand layers and cobble zones, usually encountered within the vadose zone, caused premature refusal in most instances where the ESP system was deployed from the surface.

To preserve the integrity of the sampling program, PSARA utilized a 2.25-inch-inside-diameter hollow-stem auger, in conjunction with a 2-inch split spoon to collect soil samples throughout the vadose zone. Upon reaching the top of the water table, the ESP<sup>TM</sup> system was deployed through the center of the augers. This combination of methods was selected in the field to allow for both sampling the harder-than-expected unconsolidated material in the vadose zone and the subsequent collection of groundwater samples below the water table.

Soil sampling continued in each boring until heaving sand prohibited further sampling. Soil samples were retrieved from the split-spoon samplers and split into two aliquots. One sample aliquot was placed in a new, labeled, zipper-lock bag for headspace screening analysis. The other aliquot was used to log the boring and was discarded with the drill cuttings.

Soil vapor headspace screening was conducted in the field with an HNu photoionization detector (PID) and a Foxboro flame ionization detector (FID). The PID analysis was used to supplement the FID analysis when it was noted in the field that methane was forming a significant portion of the headspace.

The PID is factory calibrated annually to benzene. However, in the field, it is impractical to use benzene as a calibration gas due to its hazardous nature. According to the manufacturers specifications and industry accepted practices, isobutlene gas is used for field calibration. The HNu has a relative response factor of 0.56 to the isobutlene calibration gas for a 10.2 eV probe. Therefore, the instrument is calibrated to read 56 ppm isobutlene instead of 100 ppm.

PSARA technician calibrated the PID immediately prior to use in the field according to the following procedure: fill then purge a plastic Tedlar bag with zero air; fill the Tedlar bag with a standard consisting of 100 ppm isobutylene balanced with zero air; insert the probe of the PID into the Tedlar bag and close with an airtight seal; and adjust the instrument's span (calibration device) to read 56 ppm.

The FID is factory calibrated annually against a methane standard to read methane concentrations directly. A PSARA technician calibrated the FID immediately prior to use in the field according to the following procedure: fill then purge a plastic Tedlar bag with zero air; fill the Tedlar bag with a standard consisting of 100 ppm methane balanced with zero air; insert the probe of the FID into the Tedlar bag and close with an air tight seal; and adjust the instrument's span (calibration device) to read 100 ppm.

Headspace screening was conducted on sample aliquots from each sampling location to determine relative amounts of VOCs present in the soil. Samples were screened upon the completion of each boring. Prior to analysis, the samples were placed inside the cab of the field vehicle and allowed to warm for approximately 15 minutes prior to performing the headspace screening analyses. During the screening analysis, the probes of the FID and PID were inserted into the headspace of the plastic bag containing the sample aliquot. Headspace analysis results are summarized in Table 1, and are included on the Soil Boring Logs in Appendix A.

The split-spoon samplers were decontaminated between each use according to the following procedure: wash with a nonphosphate detergent; rinse with potable water; rinse with deionized water; rinse with methanol; and finally rinse with deionized water. The decontamination fluids were collected in 5-gallon buckets during decontamination, and then transferred into a labeled 55-gallon drum, which was left at the staging area for disposal by OEPA.

All down-hole equipment (i.e., augers, drill rods, ESP<sup>TM</sup> equipment, etc.) was decontaminated between each boring with a high-pressure stream cleaner. The decontamination unit is a portable unit with a shielded collection tank used to contain decontamination fluids and soil. All decontamination fluids were containerized on site in labeled 55-gallon drums. Auger cuttings were also collected in labeled drums and stored on site pending disposal.

# 2.3.2 Groundwater Sampling

In addition to the collection and logging of soil samples, PSARA collected groundwater samples from borings SD-001, SD-002, SD-004A, and SD-005. Groundwater samples were not collected from the remaining borings because those borings had to be abandoned prior to reaching the saturated zone due to heaving sand.

Groundwater samples were collected by deploying the water sampling probe for the ESP<sup>TM</sup> system. The water sampling probe consists of a screened drive-point section that attaches to the inner rods, essentially replacing the split-spoon assembly previously described. The screened section has a double layer of rubber O-ring gaskets above and below the screened section. To deploy the sampler, both the outer casing and inner rod assemblies are removed from the ground and decontaminated. The water sampling probe is then inserted inside the outer casing with the screened section shielded by the outer casing. The entire assembly is advanced to the desired sampling interval, at which point the inner probe assembly is pushed in advance of the outer casing, thus opening the screen to the formation water.

Because of time limitations and problems with heaving sands and auger refusal groundwater samples were not collected from three intervals within the saturated zone, as originally proposed in the Work Plant Samples were, however, collected from two intervals in most of the borings. The initial ("shallow") sample was collected from approximately 8 to 10 feet into the saturated zone, whereas the second ("deep") sample was then collected 10 to 15 feet below the shallow sample. A duplicate sample was collected from additional sample aliquots collected from the 28 foot interval from boring SD-004A. The groundwater sample locations are summarized in Table 2.

Groundwater samples were retrieved from the sampling probe with a small-diameter stainless steel bailer, which was decontaminated between each use according to the method for downhole equipment described previously. The samples were collected in two 40-ml glass vials provided by OEPA. The vials were pre-preserved by adding hydrochloric acid. The samples were labeled, placed in individual plastic zipper-lock bags, and placed in a cooler with ice. The samples were maintained at the site by OEPA personnel and shipped by OEPA to the OEPA Division of Environmental Services for analysis.

Daily rinseate blanks were collected in accordance with the QAPP. Rinseate blanks were collected by assembling the water sampling probe, filling the probe with deionized water and decanting the rinseate into two pre-preserved 40-ml glass vials.

# 2.4 MONITORING WELL INSTALLATIONS

# 2.4.1 Monitoring Well Locations

It was anticipated that the locations of monitoring wells would be based on the groundwater analytical results, specifically, the number of parameters detected and their relative concentrations. The wells would then be located in areas with the highest contaminant levels. It was OEPA's best professional judgment, however, that there was little difference in the groundwater analytical results from the borings, and, therefore, the selection of well locations was based in the suspected groundwater flow direction and on ease of access. The locations were approved by the OEPA prior to the start of drilling. Due to the lack of a suitable location for an upgradient well, the OEPA omitted the installation of this well from the scope of work.

All wells were screened approximately 20 to 30 feet below the top of the groundwater table. One well, MW-101, was positioned midway between SD-001 and SD-002 along the southern site boundary. Monitoring wells MW-102 and MW-103 were installed west of the site in the flood plain of the Great Miami River and adjacent to a bike path that parallels the river. Monitoring well MW-101A was installed approximately 8 feet east of MW-101.

# 2.4.2 Monitoring Well Installation

PSARA installed groundwater monitoring wells MW-101, MW-102, and MW-103 at the site on April 5, April 8, and April 9, 1996, respectively. Monitoring well locations are presented in Figure 4. Due to faulty well construction of MW-101, a replacement well, MW-101A was installed on May 7, 1996. Well construction consisted of 2-inch-diameter flush-threaded polyvinvlchloride (PVC) riser pipe coupled to a 10-foot section of 0.010-inch machine-slotted PVC well screen. The well screen was surrounded by a filter pack of coarse washed quartz sand and sealed with at least a 2-foot layer of hydrated bentonite. The bentonite seal was topped with a bentonite and Portland cement grout and capped with a concrete pad. A locking well seal was placed on each well to prevent tampering.

Further well protection was provided by a locking steel standpipe protective cover installed in a 2-foot by 2-foot concrete pad. Further protection was provided by installing two steel posts filled with concrete adjacent to each well. Well Construction Diagrams are presented in Appendix B.

Well logs for the newly installed wells were submitted to the Ohio Department of Natural Resources (ODNR). Copies of the ODNR Well Logs are included in Appendix C.

# 2.4.3 Monitoring Well Development

On April 23, 1996, PSARA field personnel developed monitoring wells MW-101, MW-102, and MW-103 to remove excess fine particulates. Monitoring well MW-101A was developed on May 10, 1996. Prior to well development, PSARA measured the depth to groundwater in the monitoring wells with an oil/water interface probe and checked each well for the presence of nonaqueous-phase liquids (NAPLs) at the top and bottom of the water column. No measurable layer of NAPL was found in the wells on the dates they were developed. Depth-to-groundwater measurements are reported on the Well Development Logs in Appendix D and summarized in Table 5.

All wells were developed in accordance with the Work Plan. Monitoring wells MW-101, MW-102, and MW-103 were purged with a 2-inch submersible pump. The well was determined to be properly developed when the following criteria had been met: 1) at least three standing well volumes of water had been removed and the pH was within 0.1 S.U., the conductivity was within 10  $\mu$ mhos/cm, and the temperature was within 0.5°C of the preceding measurements; and 2) the purge water was free of suspended silt and sediment or became less turbid during development.

An average of 30 gallons of water was removed from each well before the well was determined to be properly developed. The purge water was pumped into a 250-gallon poly tank provided by OEPA, transported to the Montgomery County Wastewater Treatment Plant, and discharged into the sanitary sewer system.

Monitoring well MW-101A was developed using a surge block and bailer. A 2-inch-diameter surge block was lowered into the well with a ridged drop rod. The surge block was moved up and down in 1-foot increments throughout the length of the screen. The well was then purged with a decontaminated stainless steel bailer until it was determined to be properly developed.

# 2.4.4 Monitoring Well Decommissioning

During well development activities, PSARA discovered that monitoring well MW-101 was installed with a bow or bend in the well casing. This deflection prohibited the efficient use of bailers for purging and sampling. Accordingly, PSARA replaced monitoring well MW-101 with MW-101A on May 7, 1996. The original well, MW-101, was decommissioned on the same day by overdrilling the well with 4.25-inch hollow-stem augers, pulling the well through the augers, and sealing the borehole with a hydrated mixture of Portland cement and bentonite. The boring was grouted from bottom to top through the augers. During extraction, the well broke, leaving the lower 5 feet of the PVC screen at the bottom of the boring.

A copy of the ODNR well sealing report is included in Appendix C.

#### 3.0 SUMMARY OF FINDINGS

# 3.1 LOCAL AND REGIONAL GEOLOGY AND HYDROGEOLOGY

As stated earlier, the site lies adjacent to the Great Miami River, which flows north to south along the western boundary of the site. Regionally, the site overlays the Great Miami Buried Valley system. The valley fill is glacial outwash comprising primarily sand and gravel. Depth to bedrock beneath the site is unknown but, based on deep wells in the vicinity, is expected to be in excess of 185 feet below grade. There are till and bedrock highlands approximately 0.5 mile west of the site.

Regionally, the Great Miami River is expected to provide a major control for groundwater flow in the area. Therefore, regional groundwater flow in the area is expected to be west to southwest toward the river. Local variations are likely, however. Groundwater yields in the vicinity of the site are expected to be 500 to 1000 gpm (Schmidt 1986).

Based on the results of soil sampling, the soil beneath the site comprises primarily sand units with variable amounts of gravel and silt. Localized silty to sandy clay units were encountered across the site at variable depths. Additionally, localized cobble layers were encountered, usually within the vadose zone. Flowing and heaving sands were encountered during drilling operations within 5 to 8 feet of the top of the water table. Up to 3 feet of sand was observed flowing into the augers. Multiple thin brown oxidized zones were common in the vadose zone within 2 feet of the observed static water.

Exploratory borings SD-003 through SD-007, which were installed within the estimated boundaries of the landfill, indicate the fill material, which consists of ash, cinders, foundry sand, debris, and unidentifiable black sludge-like material, is approximately 8 to 12 feet thick along the western site border. The fill material overlays sand with variable amounts of silt and gravel. Abundant silt was encountered in borings SD-101 and SD-101A.

# 3.2 SOIL SAMPLING RESULTS

Soil sampling indicates the soil beneath the site comprises primarily sands with variable amounts of silt and gravel. Isolated coarse gravel/cobble zones were encountered across the site. Soil sampling within the presumed boundaries of the fill indicates the fill material is highly variable with ash/cinder zones, numerous pieces of burnt wood, miscellaneous waste material (plastic bags, broken glass, etc.), buff colored, well sorted sand (presumed to be foundry sand), and unidentifiable black sludge-like material.

Results of the headspace screening analyses revealed generally low to moderate amounts of volatile organic vapors in the sample headspace. Several borings (SD-003, SD-006, and SD-006A) had FID headspace screening results in excess of 500 ppm. Conversely, field screening of the same samples with the PID indicated significantly lower vapor concentrations. It is assumed, therefore, that since the FID will detect methane whereas the PID will not, the majority of the volatile organic vapors detected by the FID were methane.

Visible vapors were observed emanating from the top of the augers while drilling SD 007.

Based on air monitoring results conducted during drilling operations, these vapors were also determined to be methane.

# 3.3 GROUNDWATER SAMPLING RESULTS

Table 3 summarizes the analytical results for groundwater samples collected from exploratory borings SD-001, SD-002, SD-004A, and SD-005. Figure 5 presents the groundwater analytical results in relation to the boring locations. All samples were analyzed for VOCs using EPA Method 624. None of the VOCs identified exceeded the maximum contaminant levels (MCLs). The groundwater analytical report is presented in Appendix E.

All groundwater data was used as screening data to guide the placement of monitoring wells and is not intended to represent aquifer quality. Factors such as excessive siltation of the samples, caused by not sampling a developed well, may decrease the quality of the samples collected using the ESP<sup>TM</sup> water sampling probe. Additionally, the excessive siltation caused visible reaction (sustained effervescence) with the HCl used to preserve the sample. The effervescence caused headspace to develop within the sample vial, thus

reducing the quality of the sample. The data were judged to be usable only as screening data for locating the monitoring wells.

The groundwater monitoring wells are scheduled to be sampled by OEPA personnel.

# 3.4 QUALITY CONTROL SAMPLE RESULTS

Daily rinseate blanks were collected whenever groundwater samples were collected. Methylene chloride was detected in the blanks collected on February 21 and 22, 1996. Additionally, 0.9 ppb of 1,2-dichloroethane was detected in the blank collected on February 21, 1996. No rinseate blank was collected on February 20, 1996, because the sample probe was destroyed while attempting to collect the final groundwater sample that day.

Trip blanks accompanied each sample shipment to the laboratory. Methylene chloride was detected in the trip blank collected on February 20, 1996. No VOCs were detected in the remaining trip blank samples. Results of the quality control samples are summarized in Table 4 and the Quality Control Sample analytical reports are included in Appendix F.

Methylene chloride was detected in the rinseate blanks collected on February 20, and February 21, 1996 and in the trip blank collected on February 20, 1996. Additionally, 1,2-Dichloroethane (1,2-DCA) was detected in the rinseate blank collected on February 21,1996.

The presence of methylene chloride in two of the rinseate blanks and one of the trip blanks, coupled with the absence of this compound in the groundwater samples, may be an indication of laboratory contamination. The presence of 1,2-DCA in the rinseate blank collected on February 21, 1996, indicates that decontamination procedures on that day was not totally effective. The rinseate blank was collected after sample SDGW004 but before sample SDGW005. It is likely that the results of SDGW004 are representative of the groundwater while the results of sample SDGW005 may be questionable.

# 3.5 GROUNDWATER FLOW

Approximate water table surface and groundwater flow direction were interpreted from the monitoring well elevations and the depth-to-groundwater measurements made on

April 23, 1996. Groundwater elevation data is summarized in Table 5. The groundwater contour map presented in Figure 6 indicates that groundwater flows to the southeast under an approximate hydraulic gradient of 0.002 feet/foot.

Groundwater measurements were collected from monitoring well MW-101A on May 10, 1996. Monitoring wells MW-102 and MW-103 could not be accessed on this date because the Great Miami River was above flood stage, thus restricting access to these wells.

The direction of flow is contrary to the expected flow pattern (i.e., toward the Great Miami River). It is likely that flow near the river is complex and variable with river stage. Additionally, the water-filled gravel pit located along the south side of the site may also alter the groundwater flow patterns.

# 3.6 MANAGEMENT OF INVESTIGATION-DERIVED WASTES

All residual materials (i.e., soil, decontamination water, used personal protective equipment) generated during the site investigation were containerized in labeled 55-gallon drums. A staging area for the drums is located near the entrance gate to the site. The drums were placed on plastic sheeting and left in the staging area pending disposal. OEPA will sample and characterize the waste, and PSARA will arrange for disposal of the drums in accordance with the Work Plan and QAPP.

# 4.0 VARIANCES

The following summarizes significant changes to either the original objectives as stated in the mobilization order, the scope of work described in the Work Plan, or the sampling and analysis plan as described in the QAPP.

# 4.1 SCOPE OF WORK

The following items represent changes to the basic framework of the project directed by or agreed to by the OEPA:

- The geophysical survey requested in the mobilization order was deleted by OEPA.
- At the direction of OEPA, no background well was installed at the site.
- OEPA personnel assumed responsibility for sampling and characterizing of all IDW.
- Monitoring well MW-101 was decommissioned in accordance with standard industry practice. There was no contingency for well decommissioning in the approved project documents.

# 4.2 FIELD / SAMPLING PROCEDURES

The following items reflect changes in field procedures required to meet field conditions. All alterations of the field procedures were approved by onsite OEPA personnel.

- Heaving sands, which caused split spoons to become sand-locked in the augers or ESP<sup>TM</sup> casing, prevented complete soil sampling in the saturated zone.
- Monitoring well MW-101A was developed using a surge block and bailer at the request of OEPA.

- Development water was containerized in a poly tank provided by OEPA and was transported to the Montgomery County Waste Water Treatment plant for discharge. Permission to discharge was obtained by OEPA.
- Pre-preserved sample vials were provided by OEPA.

# 4.3 SAMPLE CUSTODY

OEPA personnel retained responsibility for sample custody in the field, maintaining the chain of custody and shipment of the samples to the laboratory. PSARA personnel handed each sample vial to the OEPA onsite representative as they were collected.

# 4.4 LABORATORY

At the direction of OEPA, the groundwater samples were submitted to the OEPA Department of Environmental Services Laboratory for analysis as opposed to Ross Analytical Services as specified in the QAPP.

# 4.5 DATA VALIDATION

Data validation was limited to the verification of sample holding times and the collection of rinseate and trip blanks. OEPA chose not to require matrix spike and matrix spike duplicate samples, and the lack of this data prevented full data validation described in the QAPP.

# 5.0 REFERENCES

PSARA Technologies, Inc. 1996a. Final Work Plan, South Dayton Dump and Dorothy Lane Landfill, Mobilization Order No. 557-01. Prepared for the Ohio Environmental Protection Agency, Division of Emergency and Remedial Response, Southwest District Office.

PSARA Technologies, Inc. 1996b. Site-specific Quality Assurance Project Plan, South Dayton Dump and Dorothy Lane Landfill, Montgomery County, Ohio, Mobilization Order No. 557-01. Prepared for the Ohio Environmental Protection Agency, Division of Emergency and Remedial Response, Southwest District Office.

PSARA Technologies, Inc. 1996c. Site-specific Health and Safety Plan. Dorothy Lane Landfill and South Dayton Dump, Moraine, Ohio, Mobilization Order No. 557-01. Prepared for the Ohio Environmental Protection Agency, Division of Emergency and Remedial Response, Southwest District Office.

PSARA Technologies, Inc. 1993. Generic Quality Assurance Project Plan, Remedial Response Level-of-Effort Contract. Prepared for the Ohio Environmental Protection Agency, Division of Emergency and Remedial Response, Southwest District Office.

Schmidt, James J. 1986. Groundwater Resources of Montgomery County. Ohio Department of Natural Resources.

**TABLES** 

Table 1. Headspace Screening Results February 19 through February 27, 1996 South Dayton Dump, Moraine, Ohio

Concentration, ppm <sup>a</sup>																		
Depth,	SD-001	SD-002		<u>-003</u>		-004		004A		<u>-005</u>		-006	SD-C		SD-C		SD-	
ft	FID	FID	FID	PID	FID	PID	FID	PID	FID	PID	FID	PID	FID	PID	FID	PID	FID	PID
0 to 2	NS <sup>b</sup>	0.0	8.4	2.8	6.0	5.1	2.8	4.2	3.6	1.2	12	4	1	3	6	12	5	.3
2 to 4	NS	0.2	540	5.2	1.4	3.8	1.8	3.0	4.0	1.6	500	4	>1000	6		••	5	1
4 to 6	NS	0.0	22	16.8	2.2	5.0	4.0	3.2	3.2	1.6			>1000	11			80	4
6 to 8	N5	0.0		•••	2.4	4.8	3.8	4.2	2.6	2.0						••	20	1
8 to 10	NS.	0.0		••	5.8	4.8	3.0	4.0	2.8	1.0		•-				••	100	· <b>3</b> ·
10 to 12	NS	0.0			18	4()	7.2	6.8	3.0	1.2					••		300	2
12 to 14	N5	6.8					NRc	NR '	NR	NR				••		••	20	3
14.to 16	29	14			••		4.2	. 3.8	14	10.2		••		•				
16 to 18	160	6.6				₩.₩	24	8.0	10	16				·				
18 to 20	300	60				••	2.8	4.0	12	6.2	•••.							
20 to 22	18	400 -	'			<b></b> ·	22	7.5	7.8	3.6				••	**		••	
22 to 24		180					5.2	5.8	24	5.0		••			••			
24 to 26		160					8.6	5.4	10	3.2								
26 to 28							4.8	4.6						-,-				

Vapor headspace concentrations are reported for total organic vapors including methane (FID) and not including methane (PID)
 NS=no sample collected
 NR = no recovery
 = boring did not extend through these intervals.

Table 2. Groundwater Sample Locations South Dayton Dump, Moraine, Ohio

Sample Number	Location (Boring Number)	Date Collected	Sample Depth, ft
SDGW001	SD-001	Feb. 19. 1996	19
SDGW002	SD-002	Feb. 20, 1996	22
SDGW003	SD-002	Feb. 20, 1996	32
SDGW004	SD-001	Feb. 21, 1996	34
SDGW005	SD-004A	Feb. 23, 1996	23
SDGW006	SD-004A	Feb. 23, 1996	28
SDGW007a	SD-004A	Feb. 23, 1996	28
SDGW008	SD-005	Feb. 26, 1996	28
SDGW009	SD-005	Feb. 26, 1996	43

<sup>&</sup>lt;sup>a</sup> Sample SDGW007 is a duplicate sample of SDGW006.

Table 3. Groundwater Analytical Results South Dayton Dump, Moraine, Ohio

Concentration, ppb									
Constituent	SDGW001	SDGW002	SDGW003	SDGW004	SDGW005	SDGW006	SDGW007	SDGW008	SDGW009
Benzene	1.2	0.8	1.9	0.9	0.8	0.6	0.5	0.7	1.6
-	•				·				1.6
1,1-Dichloroethane	0.5	1.2	2.8	0.8	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	1.5	1.9	2.3	1.5	2.4	1.5	1.5	2.1	2.9
Trichloroethene	4.6	<0.5	<0.5	2.8	1.5	2.0	2.2	<0.5	2.4
1,2-Dichloroethane	< 0.5	0.5	<0.5	0.9	0.9	<0.5	0.8	<0.5	<0.5
cis-1,2-Dichloroethen	e <0.5	0.9	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (total m+p)	< 0.05	0.6	<0.5	<0.5	1.2	0.7	0.7	0.9	0.9
Vinyl chloride	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	0.6	0.7
1,2,4-Trimethylbenzer	ne <0.5	< 0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.5
o-Xylene	< 0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	0.7

Table 4. Quality Control Sample Analytical Results
South Dayton Dump
Moraine, Ohio

	Concentration, (ppb)							
Sample No. Sample Type Date Collected	SDR1001 Rinseate Blank Feb. 20, 1996	SDR1002 Rinseate Blank Feb. 21, 1996	SDR1003 Rinseate Blank Feb. 23, 1996	Trip Blank Feb. 20, 1996	Trip Blank Feb 21, 1996	Trip Blank Feb. 23, 1996	Trip Blank Feb. 26, 1996	
CONSTITUENT								
Methylene Chlori	de 0.6	0.7	<0.5	0.8	<0.5	<0.5	<0.5	
	ne <0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	

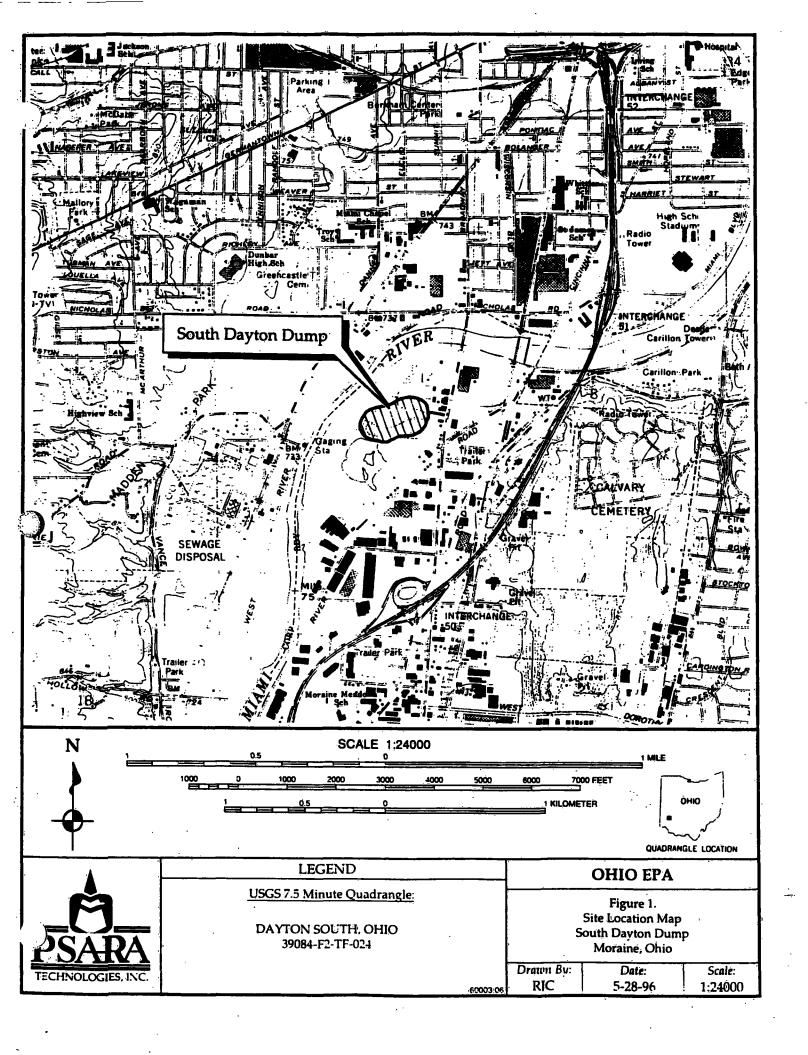
Table 5. Groundwater Elevation April 23, 1996 South Dayton Dump, Moraine, Ohio

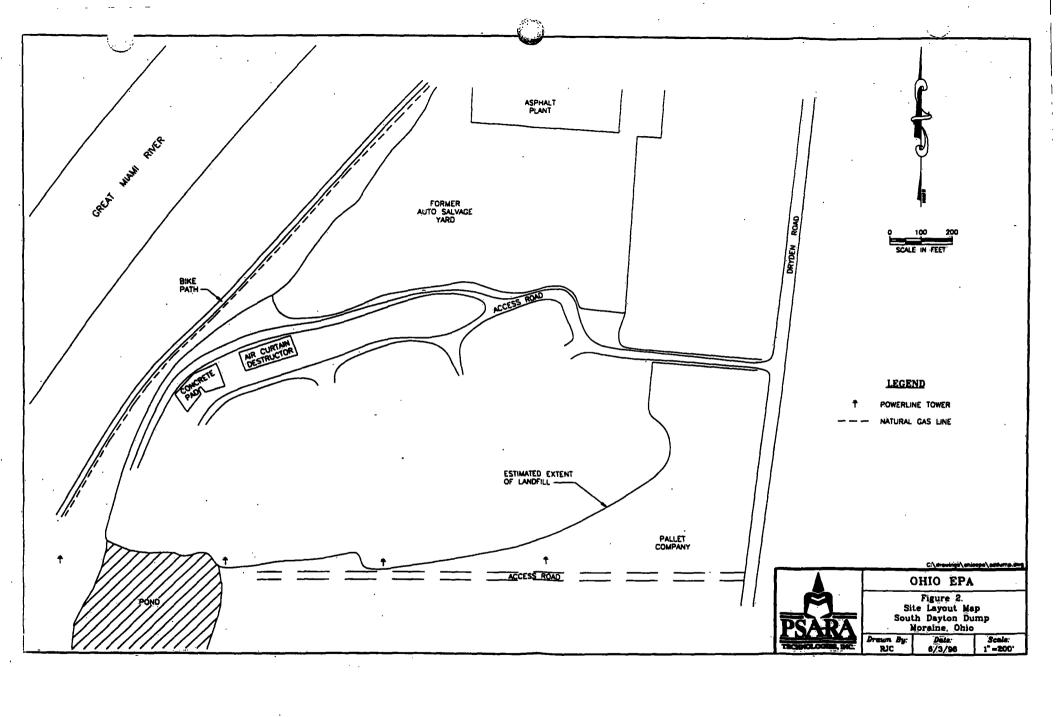
Well No.	Top of Casing Elevation, ft <sup>a</sup>	Depth to Groundwater, ft	Groundwater Elevation, ft <sup>a</sup>	Ground surface Elevation, ft <sup>a</sup>
MW-101	107.36	15.10	92.26	104:68
MW-102	100.00	6,97	93:03:	96.96
MW-103	98.91	5.80	93.11	97.04
MW-101Ab	107.42	10.52	96.90	104.68

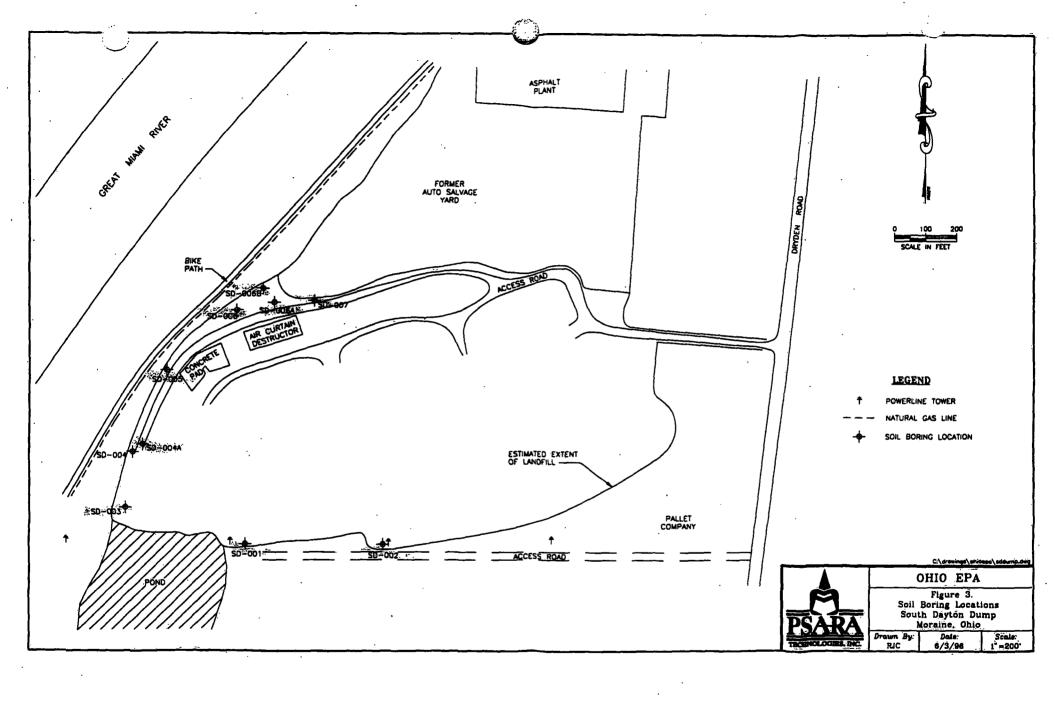
Elevation measured relative to arbitrary site datum, established as the top of the well casing in MW-102 (100.00 ft).

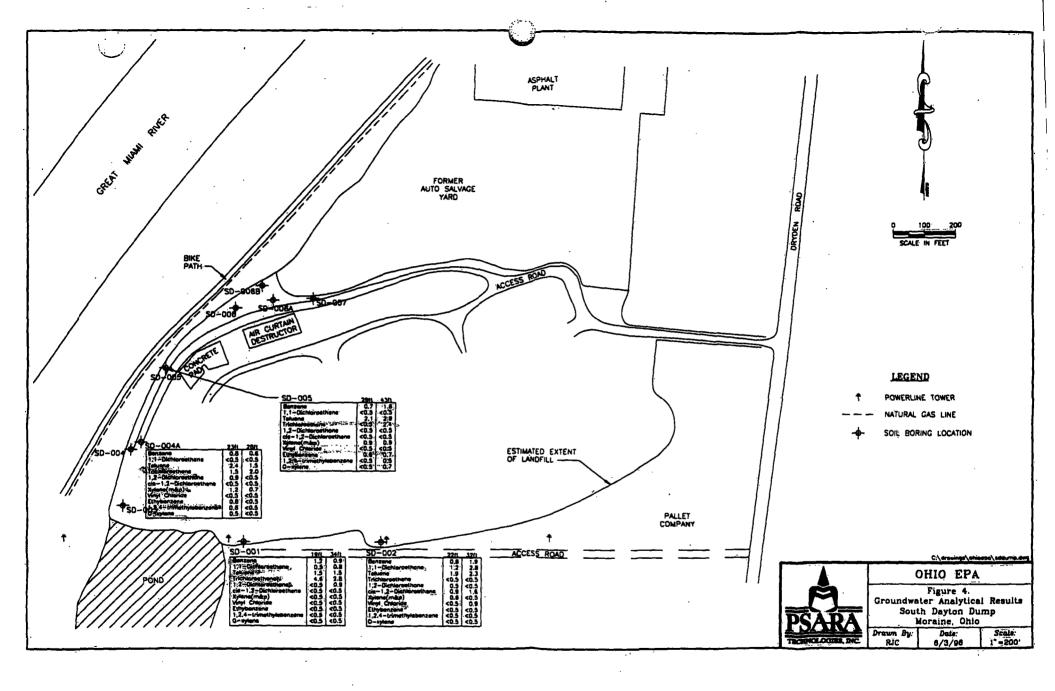
b Depth to water measurement collected on May 10, 1996.

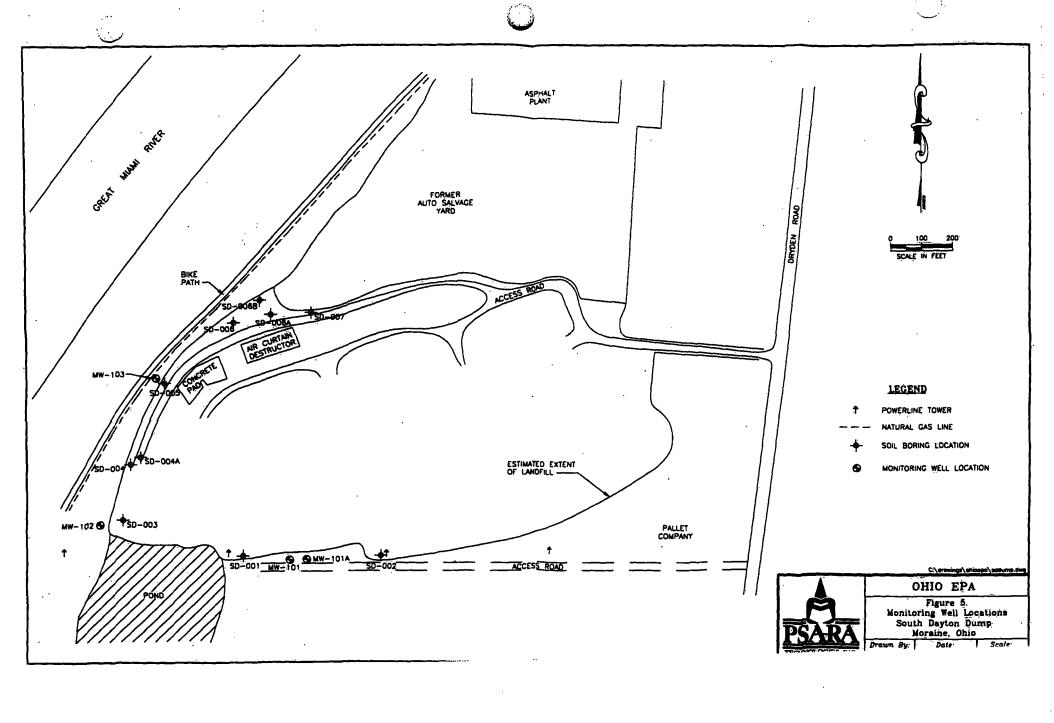
FIGURES

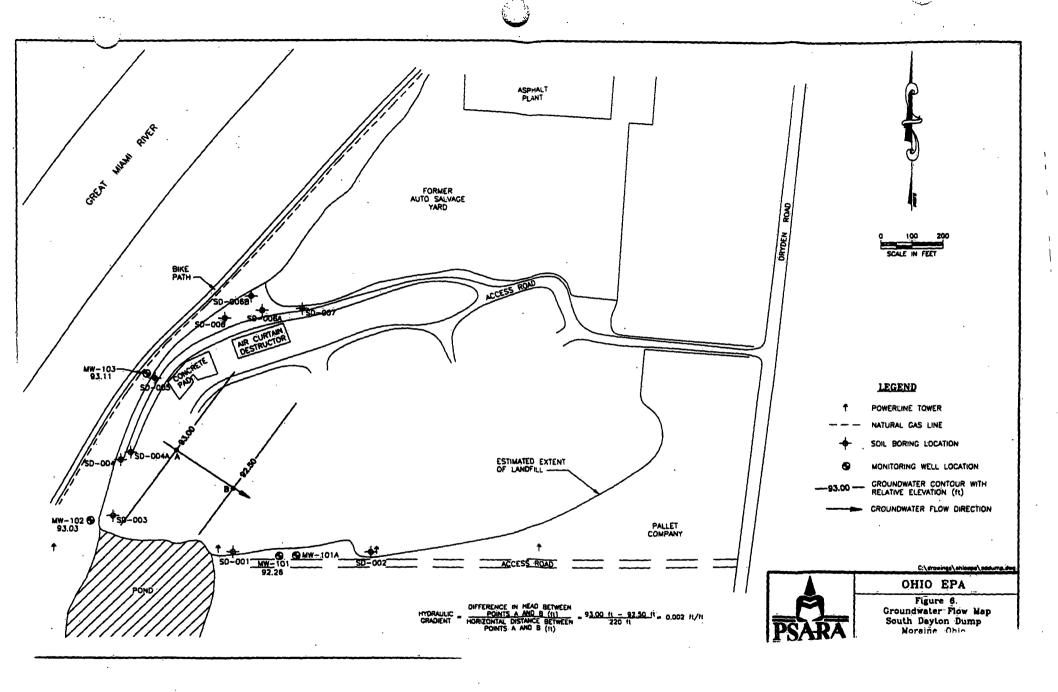












APPENDIX A

**Soil Boring Logs** 



Project No.	60		
Boring No.		SD-001	
Page	1_	of _	2

Canara	1 1 100	farm	ation
Genera			auvii

Client: Ohio EPA	Boring No.: SD-001			
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 19, 1996			
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: ESP/1.25 in.			
Drilling Contractor: CAS	Total Depth of Borehole (ft): 22			
Sampling Device: 1 x 24" split spoon	Depth to Water Observed During Drilling (ft): 12			
Headspace Screening Instrument: PID 🕱 FID	Well Installed: Tyes To No Well No.: —			

<del>-                                    </del>		Recovery (in)	Blow Sample/Core Description		Reading	p (ppm)
n To	o d		Count	Sample/Core Description	Total Organic	Total Methane
2		13		6 in. brown loamy soil over ≈4 in. black		
1		$\dashv$	···-	asphalt over ≈8 in. brown silty clay with brick.		
4	• •	6		Brown silty clay with minor amount (<5%) of		
	-	$\dashv$		very small gravel. Stiff.		
6		•		No recovery.		
8		6		Clay; brown silty to sandy clay with timestone		
			<del></del>	fragments, Minor amount (<1%) of small		
10	0 1	10		Silty sand with gravel. Approximately 4 in. over		
				clay; brown silty clay with small gravel, green to		
				gray staining. Faint hydrocarbon odor.		
1:	2	0		No recovery - limestone cobble.	· . <del></del> .	-
14	4	4	·····	Sand; fine to medium grained sand with minor		
			<u></u>	silt. Wet.	—————	<u> </u>
10	6	4		Sand and gravel; coarse grained sand with		
<u> -</u>			· <del></del>	gravel - few fines. Wet.	<del></del>	· ·
	6 8 8 1 1 1 1	10	4 6 0 8 6 10 10 10 12 0 14 4	4 6 0 8 6 10 10 10 12 0 14 4	asphalt over =8 in. brown slity clay with brick.  4 6 Brown slity clay with minor amount (<5%) of very small gravel. Stiff.  6 0 No recovery.  8 6 Clay; brown slity to sandy clay with limestone fragments. Minor amount (<1%) of small. gravel. Moist.  10 10 Slity sand with gravel. Approximately 4 in. over clay; brown slity clay with small gravel, green to gray staining. Faint hydrocarbon odor.  12 0 No recovery - limestone cobble.  14 4 Sand; fine to medium grained sand with minor silt. Wet.	asphalt over =8 in. brown silty clay with brick.  4 6 Brown silty clay with minor amount (<5%) of very small gravel. Stiff.  6 0 No recovery.  8 6 Clay; brown silty to sandy clay with limestone fragments. Minor amount (<1%) of small gravel. Moist.  10 10 Silty sand with gravel. Approximately 4 in. over clay; brown silty clay with small gravel, green to gray staining. Faint hydrocarbon odor.  12 0 No recovery - limestone cobble.  14 4 Sand; fine to medium grained sand with minor silt. Wet.

Notes	•	
<u> </u>	Ent'd	by: SLW
	Ck'd t	oy: MES
	Date:	3/26/96



Project No.	60	003:06	<u> </u>	
Boring No.		D-001		
Page	2	of	2	

Summary of	<u> </u>	<u> </u>							
Sample No.	Sample Depth (ft)		Samp Depth	nple th (ft)	Recovery (in)	Blow	Samala/Cara Description	Heads Reading	pace (ppm)
Odnipio 110.	From	To	R S	Count	Sample/Core Description	Total Organic	Total Methane		
Auger, Split Spoon	12	14	0_	1-1-1-1	No recovery - spoon wet at ≈13 ft.				
SD001-01	14	16	8	5-3-2-2	Sand; fine to medium grained sand overlaying	280			
					medium size gravel.				
SD001-02	16	18	20	7 <del>-6-6-8</del>	Sand and gravel; medium to coarse sand with	160			
					large gravel (up to 2 in.), wet. Some slit.				
SD001-03	18	20	22	20-17-16-18	Coarsening downward sequence of fine to	300			
					medium grained sand down to coarse clean				
					gravel at bottom of spoon. Some clay/slit in				
			<del> </del>		sandy units.				
SD001-04	20	22	14	11-14-18-21	Sand; fine to medium sand (=4 ") overlying	18			
		<u> </u>	<u> </u>		tight sand with abundant silty clay and gravel.				
			<u> </u>		Dry spots throughout tight clayey sand. Wet				
<del></del>			<u> </u>		above.		<u> </u>		
SD001-05	22	24	0		≈2 ft of heaving sand.				
<del></del>	ļ,	<b> </b>				<u> </u>			
			-	<u> </u>		·			
<del></del>									
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Γ	Ent'd by: SLW
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ſ	Date: 3/26/96



Project No.	60	003.06	
Boring No.		SD-002	
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Date: 3/26/96

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Client: Ohio EPA	Boring No.: SD-002				
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 20, 1996				
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 2.25-in. I.D. HSA/4.75 in.				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 26				
Sampling Device: 2 x 24 in. split spoon	Depth to Water Observed During Drilling (ft): 12				
Headspace Screening Instrument:  PID X FID	Well Installed: Yes X No Well No.: -				

Sample No.	San Dept		Recovery (in)	Blow	Constant Constant	Head: Readin	space g (ppm)
	From	Το	Α.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε.Ε	Count	Sample/Core Description	Total Organic	Total Methane
SD002-1	0	2	18	7-7-6-5	Clay: brown silty clay with large gravel upper	0.0	
					4 in. Minor (<5%) small gravel with black		
<del></del>					mottling throughout, Tight.		
. <del>.</del>	]						
SD002-2	2	.4	12	3-3-3-3	Clay; brown silty clay with black mottles and	0.2	
	<u> </u>				minor amount of small gravel. Tight, Moist		<u> </u>
					upper 2 in. Glass and other debris		
					fragments.		
· · · · · · · · · · · · · · · · · · ·							
SD002-3	4	6	18	3-4-4-4	Clay; light brown silty clay (upper 6 in.)	0.0	
				<u> </u>	overlaying brown silty to sandy clay with		<u> </u>
			<u> </u>		abundant small gravel. Sand lower 2 in. of		<u> </u>
·			<u> </u>		spoon.		
·.			<u></u>				
SD002-4	6	8_	12	6-21-16-14	Sand: poorly sorted sand with up to 10% small	0:0_	<u> </u>
					to medium gravel. Clean on fine end. Larger	L	<u> </u>
					cobble fragments.		<u> </u>
							1
SD002-5	8	10	12	14-35-21-24	Sand; poorly sorted sand with up to 15% small	0.0	
					round gravel. Minor amount of silt. Loosely		
			<b></b>		compacted.		
SD002-6	10	12	12	15-17-16-15	Sand; poorly sorted sand with up to 15% small	0.0	
· 		-	1		gravel. Silty, loosely compacted. Faint odor.	i I.	

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From	Sample No.		Sample Depth (ft)	Blow	Comple/Corp Description	Headspace Reading (ppm)	
	То	F	Count	Sample/Core Description	Total Organic	Total Methane	
12	14	10	12-27-22-22	Sand; poorly sorted sand with abundant small	6.8		
				gravel, silt and clay. Numberous rusty brown			
				mottles and streaks. Wet. Tight.		ļ	
14	16	14	30-8-7-7	Sand; poorly sorted fine to coarse sand with	14		
				gravel and silt (upper 6 in.) overlaving fine to			
			i :				
46	10	10	471010	Sendand anyel. Sin of seems and and		<del>                                     </del>	
10	10	<del>  '^</del> -	4-7-10-10		0,0	<del>                                     </del>	
-				,		1	
	├ <u></u>	<u> </u>		of the divini glames, well saturated sails.	<del></del>		
18	20	8	14-16-4-4	Sand: poorly sorted sand with small gravel and	60		
			<del></del>	silt. Wet.			
20	22	6	6-6-4-4	Gravel; coarse angular gravel with few medium	400		
	· .			to fine sand and silt. Wet.		ļ	
22	24	6		Sand: tightly compacted sand with abundant	180	-	
				clay and gravel. Wet throughout	;		
					/		
24	26	28	50-32-32-25	Sand; wet fine to medium grained sand over-	160		
	<u> </u>	ļ.,		laying tight sandy clay with gravel, moist to		ļ	
		<b> </b>	ļ	damp (≈6 in.) overlaying fine to medium grained	· · · · · · · · · · · · · · · · · · ·	ļ	
		ļ		wet sand.		ļ	
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	<del> </del>	<b> </b>	· · · ·		<del></del>	<del> </del>	
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	<u> </u>	<del> </del>		<b>_</b>		<del> </del>	
	16	16 18 18 20 20 22 22 24	16 18 12 18 20 8 20 22 6 22 24 6	16 18 12 4-7-10-10 18 20 8 14-16-4-4 20 22 6 6-6-4-4	mottles and streaks. Wet. Tight.  14 16 14 30-8-7-7 Sand; poorly sorted fine to coarse sand with gravel and sit (upper 6 in.) overlaying fine to medium sand with minor small gravel/coarse sand and no sit. Wet throughout.  16 18 12 4-7-10-10 Sand and gravel - ~6 in. of coarse sand and gravel with no visible fines overlaying 6 in. of medium grained, well saturated sand.  18 20 8 14-16-4-4 Sand; poorly sorted sand with small gravel and sit. Wet.  20 22 6 6-6-4-4 Gravel; coarse angular gravel with few medium to fine sand and sit. Wet.  22 24 6 — Sand; tightly compacted sand with abundant clay and gravel. Wet throughout.  24 26 28 50-32-32-25 Sand; wet fine to medium grained sand overlaying tight sandy clay with gravel, moist to damp (~6 in.) overlaying fine to medium grained	mottles and streaks. Wet. Tight.  14 16 14 30-8-7-7 Sand; poorly sorted fine to coarse sand with 14 gravel and silt (upper 6 in.) overlaying fine to medium sand with minor small gravel/coarse sand and no silt. Wet throughout.  16 18 12 4-7-10-10 Sand and gravel - ~6 in. of coarse sand and 6.6 gravel with no visible fines overlaying 6 in. of medium grained, well saturated sand.  18 20 8 14-16-4-4 Sand; poorly sorted sand with small gravel and 60 silt. Wet.  20 22 6 6-6-4-4 Gravel; coarse angular gravel with few medium 400 to fine sand and silt. Wet.  22 24 6 — Send; tightly compacted sand with abundant 180 clay and gravel. Wet throughout.	

Notes	 	
	,	Ent'd by: SLW
		Ck'd by: MES
		Date: 3/26/96



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Boring No.	SD-003
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#### **General Information**

Client: Ohio EPA	Boring No.: SD-003				
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 22, 1996				
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 2:25-in. I.D. HSA/4.75 in.				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 6				
Sampling Device: 2 x 24 in. split spoon	Depth to Water Observed During Drilling (ft):				
Headspace Screening Instrument: X PID X FID	Well Installed: Yes X No Well No.:				

### **Summary of Boring**

Sample No.	San Dept	nple h (ft)	Recovery (in)	Blow	Sample/Core Description	Heading Reading	space g (ppm)
Campio No.	From	То	8	Count	Sample/Core Description	FID	PID
SD003-01	0	2	18	2-2-2-27	Sequence of mixed units; 6" of black to brown	8.4	2.8
			<b>.</b>		wet clay with organics overlaying =4 in. of black		
			<u> </u>		mottled clayey sand over =4 in, of wet pinkish		
	1		-	<u> </u>	medium grained sand over wet brown silt.		-
SD003-02	2	4	8	2-16-21-26	Sand; black to brown sand with abundant silt	540	5.2
<u>)</u>	<b>_</b>		ļ	ļ	and clay (?). Wet, Very sticky, Black staining		
	-				throughout		ļ
SD003-03	4	6	12	4-4-5-5	Sand; variegated black, gray and white	22	16.8
					sand with tight clayey zones.		
					Boring stopped due to buried waste.		
	-		<u> </u>				-
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						<del> </del>	<del> </del>
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#### **Notes**

Cutting "sludgy" on auger when we withdrew.	Ent'd by: SLW
	Ck'd by:
	Date: 3/27/96



Project No.	60003.06
Boring No.	SD-004
Page _	1 of1

#### **General Information**

Client: Ohio EPA	Boring No.: SD-004				
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 22, 1996				
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: ESP/1.25 in.				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 12				
Sampling Device: 1 x 24" split spoon	Depth to Water Observed During Drilling (ft):				
Headspace Screening Instrument: X PID X FID	Well Installed: Yes X No. Well No.:				

Sample No.		opth (ft)	E Blow	Sample/Core Description	Headspace Reading (ppm)		
	From	То	Rec (	Count	Sample/Core Description	FID	PID
SD004-1	0	2	6_		Clay; brown to black slity to sandy clay with	6.0	5.1
	<del>                                     </del>			<del></del>	cinders, siag, and other debris.		
SD004-2	2	4	8		Brown clay with abundant glass fragments and	1.4	3.8
					assorted debris (5") over coarse pink brick		
	<del> </del>				fragments		
SD004-3	4	6	14	-	Clay: brown silty to sandy clay with small gravel	2.2	5.0
<u> </u>	<b></b>	ļ		<del></del>	and gravel fragments, rusty brown mottling and		ļ
<del> </del>	<u> </u>				few brick fragments.		
SD004-4	6	8	4		Sand; buff colored medium grained sand over-	2.4	4,8
· · · · · · · · · · · · · · · · · · ·	<del> </del>			<del></del>	lain by limestone cobble fragments.	<del></del>	<u> </u>
SD004-5	8	10	14		Sand; coarse to fine grained sand with abundant	5.8	4.8
·	<b>_</b>				silt. Up to 5% small angular gravel.	<del> </del>	· ·
SD004-6	10	12	8		Sand; poorly sorted fine to coarse sand with	18	_40
	-				gravel up to 20%, very well compacted. Silty.	<del>-</del>	
	<u> </u>				Probe refusal @ 12 ft		
· · · · · · · · · · · · · · · · · · ·	<del> </del>	<b> </b>	-		<u> </u>		<del> </del>
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Notes		
		Ent'd by: SLW
		Ck'd by:
		Date: 3/27/96



Project No.	60	003.06	
Boring No.		D-004	A
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#### General information

Client: Ohio EPA	Boring No.: SD-004A			
Site Location: South Dayton Dump, Dayton, Ohlo	Date(s) Drilled: February 22 - 23, 1996			
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: ESP /1.25 In.			
Drilling Contractor: CAS	Total Depth of Borehole (ft): 28			
Sampling Device: 1 x 24" split spoon	Depth to Water Observed During Drilling (ft): 17			
Headspace Screening Instrument: X PID X FID	Well Installed: Yes 🗓 No Well No.:			

### Summary of Boring

Sample No.	San Dept		Recovery (in)	Blow	Sample/Core Description -	Heads Reading	pace (ppm)
	From To & Count Sample/Core Description		FID	PID			
SD004A-1	0	2	12	-	Clay; black organic rich clay with abundant	2.8	4.2
<u> </u>					cinders.		
SD004A-2	2	4	0	,000	No recovery, rock in spoon.		
SD004A-3	4	6	4		Clay; brown slity clay with abundant coarse	1.8	3.0
				<del></del>	sand, moist.		<b> </b>
SD004A-4	6	8	12		Clay; brown silty clay with abundant sand and	4.0	3.2
					small gravel (upper 5") overlaying poorly sorted		
					sand with gravel and silt. Numerous limestone	<del></del> ,	
<del></del> _	ļ				cobble fragments.	<del></del>	<u> </u>
SD004A-5	8	10	14		Sand; poorly sorted sand with slit and abundant	3.8	4.2
<del></del>		<u> </u>			email subangular gravel (up to 15%).	<del></del>	
SD004A-6	10	12	18		Sand; poorly sorted fine to coarse sand with	3.0	4.0
					abundant gravel and slit. Gravel up to 15% and		
<del> </del>	ļ .		<u> </u>	· · · · · · · · · · · · · · · · · · ·	up to 1" diameter. Dry and loosely compacted.		ļ
SD004A-7	12	14	16		Sand; poorly sorted sand with gravel and silt.	7.2	6.8
					Numerous cobble fragments including 1 broken		
	<u> </u>	ļ	-		granite cobble.		

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Boring No.	SD-004A		
Page .	_2 of _2		

Sample No.	San Dept	Sample Depth (ft)		Recovery (in)	Blow Count Sample/Core Description	Headspace Reading (ppm)	
Gampio 140.	From	То	F	FID		PID	
SD004A-8*	14	16	18	-	Sand: poorly sorted sand with gravel and silt.	4.2	3.8
	!				=20% small subrounded gravel. Oxidized		
	i				zone =1" thick 2 inches from bottom of		
					spoon.		
<del></del>			ļ	ļ		<del></del>	
SD004A-9**	16	_18	12_	12-13-16-9	Sand: poorly sorted sand with abundant gravel	24	8.0
<del></del>			ļ	<b> </b>	and few fines (upper 4 in.) overlaying poorly		· · · · ·
<del></del>			·	<u></u>	sorted silty sand with gravel (=3 in.) overlaying		
			ļ		wet sitty sand with gravel.		
SD004A-10***	18	20	6	_	Sand and gravel; poorly sorted sand with gravel	2.8	4.0
					and silt. Wet.		
SD004A-11	20	22	8	<del> </del>	Sand; poorly sorted sand with gravel and silt.	22	7.5
<del></del>					Several cobble fragments. Very silty near		
					bottom of spoon. Wet.		
SD004A-12	22	24	6		Sand and gravel; poorly sorted sand with gravel	5.2	5.8
					and silt. Appears to have segregated during		
					sampling. Wet.		
SD004A-13	24	26	6		Gravel; poorly sorted rounded gravel with	8.6	5.4
					coarse sand. Wet.		
SD004A-14	26	28	2		Sand and gravel; poorly sorted medium to	4.8	4.6
SDOVAN-14	20	20			coarse sand and minor amount of silt. Wet.	7.0	4.0
		ļ	-			:	
				<del> </del>	BOH at 28 ft.	<u> </u>	
	ļ		<u> </u>	ļ			

Lost probe tools down hole at	16-18 ft interval. Unable to retrieve. Grouted hole. Offset ≈2 ft.
111 0001100	

1	Will continue with 2:25 HSA.	Ent'd by: SLW
-}	** Boring continued with 2.25 HSA offset ≈2 ft from SD004A initial attempt.	Ckid by: MES
	*** Switch back to ESP through augers.	Date: 3/27/96



Project No.	60003.06
Boring No.	SD-005
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#### **General Information**

Client: Ohlo EPA	Boring No.: SD-005				
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 23, 1996				
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: HSA /4.75 and ESP/1.25				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 43				
Sampling Device: 2 x 24 in. and 1 x 24 in. split spoons	Depth to Water Observed During Drilling (ft): 18				
Headspace Screening Instrument: X PID  FID	Well Installed: Yes X No Well No.:				

Sample No.	San Dept	nple th (ft)	Recovery (in)	Blow	Sample/Core Description	Heads Reading	
Gampio 110.	From	То	Pec S	Count	Sample/Core Description	FID	PID
SD005-1	0	2	18	4-6-4-4	Black organic rich clay overlaying =6 in. of	3.6	1.2
					variegated black to gray clay with cinders, slag		
					burnt wood over 6 in. of rusty brown and sandy clay with assorted debris.		
SD005-2	2	4	18	3-3-3-6	Black to gray cinder rich clay with glass, brick,	4.0	1.6
<u> </u>					and slag. Gray streaks. Moist zone (upper		
					1*). Overlaying brown sandy clay to clayey sand lower 6 in.		
SD005-3	4	_6_	8_	6-8-6-3	Clay; brown to black silty clay with gravel.  Loosely compacted.	3.2	1,6
SD005-4	6.	8	18	4-4-4-4	Clay; brown silty clay with black streaks. Few sandy clay zones. Small gravel up to 5%. Hard.	2.6	2.0
SD005-5	8	10	18	3-4-3-3	Clay; brown silty clay with abundant coarse	2.8	1.0
					mottling upper 6 in. Fewer gravel near bottom of speen.		
SD005-6	10	12	20	4-4-4-4	Clay: brown silty clay with coarse sand and small gravel. Single burnt wood at 5 in. from	3.0	1.2

	Notes	
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1		Ck'd by;
1		Date: 3/27/96



Project No.	60003.06
Boring No.	SD-005
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### **Summary of Boring**

Sample No.	San Dept	nple th (ft)	Recovery (in)	Blow	Sample/Core Description	Headspace Reading (ppn	
	From	То	Pec C	Count	Sample Core Description	FID	PID
SD005-7	12	14	14	5-5-11-12	Clay; brown silty clay upper 4 in. overlaying	14	10.2
					buff colored clayey sand to sandy clay with up		
					to 10% small rounded gravel.		
SD005-8	14	16	12	31-21-1 <del>9</del> -17	Sand; poorly sorted sand with abundant silt	10	16_
					and clay - gravel up to 5%. Single broken		
	<u> </u>				limestone cobble.		
SD005-9	16	18	18	27-18-15-16	Sand: poorly sorted sand with up to 20% small	12	6.2
					rounded gravel and abundant silt/clay. Wet		]
					lower 4 in.		
SD005-10	18	20	6	21-19-14-7	Sand and gravel; poorly sorted fine to coarse	7.8	3.6
					sand with up to 30% gravel. Wet.		
	<del> </del>		<u> </u>	<del> </del> -			
SD005-11*	20	22	8	<del>                                     </del>	Sand and gravel: poorly sorted with clay and silt. Wet.	24	5.0
					Siit. Wet.	<u>.</u>	<u> </u>
SD005-12	22	_24_	_6_		Sand and gravel: poorly sorted with clay and	10_	3.2
	-		<del>                                     </del>		silt. Wet.		
SD005-13	24	26	0		No recovery.		
		<del> </del>	<del> </del>	-		·	-
SD005-14	26	28	<del> </del>	<del> </del>	** Soil sampling abandoned =3 ft of heave into outer casing. Unable to clear.		<del>                                      </del>
	<del>                                     </del>	<del> </del>	<del>                                     </del>	<del> </del> -	Outer castrig. Onable to clear.		<del>                                     </del>
							<u> </u>
	-	<del>                                     </del>	├		<u> </u>		<del> </del>
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### Notes

1	* Switch to soil sampling with ESP system with augers at 18 ft.	Ent'd by: SLW
4		Ck'd by: MES
I		Date: 3/27/96



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Boring No.	SD-006
Page	1of1

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Client: Ohio EPA	Boring No.: SD-006				
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 26, 1996				
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 2.25-in. I.D. HSA/4.75 in.				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 4				
Sampling Device: 2 x 24 in. split spoon	Depth to Water Observed During Drilling (ft):				
Headspace Screening Instrument: X PID X FID	Well Installed: ☐ Yes 🕱 No Well No.:				

Sample No.	San Dept	nplé th (ft)	Recovery (in)	Blow	Sample/Core Description	Heads Reading	pace (ppm)
Campio No.	From	То	<b>E</b>	Count	Sample Core Description	FID	PID
SD006-1	0	2	12	3-4-6-4	Fill; black slag rich fill with abundant cinders,	12	4
	<del> </del>	<u></u>			burnt wood fragments and assorted debris.		<del></del>
SD006-2	2	4	20	3-3-2-1	Clay; brown to black sandy clay with silt and	500	4
<del></del>	-			<u> </u>	gravel, loosely compacted.		<u></u>
					BOH at 2 ft. Boring abandoned due to toxic		
	ļ			<u> </u>	atmosphere and potentially explosvie vapors.	· · · · · - ·	<u>.</u>
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_	Notes	· · · · · · · · · · · · · · · · · · ·	
[	<b>\</b>		Ent'd by: SLW
1	<i>)</i>		Ck'd by: HES
-{			Date: 3/27/96



Project No.	60	003.06		_
Boring No.		D-006	A	_
Page	1	of	1	

#### **General Information**

Client: Ohio EPA	Boring No.: SD-006A
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 26, 1996
PSARA Geologist: R. Stuck/C. Hall	Drilling Method / Borehole Size: 2.25-in. I.D. HSA/4.75 in.
Drilling Contractor: CAS	Total Depth of Borehole (ft); 6
Sampling Device: 2 x 24 in. split spoon	Depth to Water Observed During Drilling (ft): —
Headspace Screening Instrument: X PID X FID	Well Installed: Yes 🔀 No Well No.:

Sample No.	Sample Depth (ft)		Recovery (in)	Blow	Sample/Core Description	Heads Reading	pace (ppm)
Sample No. From To		Red (i)	Count Sample Cole Description	FID	PID		
SD006A-1	Ō	2	18	4-4-5-5	Fill; black slag rich with sand size material,	1	3
		·			numerous cinders with burnt wood fragments.		
					Loosely compacted.		
							· · · · · ·
SD006A-2	2	4	16	4-4-4-4	Ash (?); black slit sized with small white and	>1000	6
			<u>'</u>	.,	tan fragments. Slag-rich fill lower 5 in.		
	-		ļ				
SD006A-3	_4	6	12	2-2-3-2	Fill; cinder and ash rich black fill with	>1000	11
			ļ		assorted debris including white plastic bag.	<b> </b>	
			-			ļ	
	· '		<u> </u>				
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			Date: 3/27/96



Project No.	60003.06	
Boring No.	SD-006B	_
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Client: Ohio EPA	Boring No.: SD-006B				
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: February 26, 1996				
PSARA Geologist: C. Hall	Drilling Method / Borehole Size: 2.25-In. I.D. HSA/4.75 In.				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 2				
Sampling Device: 2 x 24 in. split spoon	Depth to Water Observed During Drilling (ft):				
Headspace Screening Instrument: K PID X FID	Well Installed: Yes X No Well No.:				

### **Summary of Boring**

Sample No.	Sample Depth (ft)		Sample Depth (ft)		Recovery (in)	Blow	Sample/Core Description	Heads Reading	pace (ppm)
Campio No.	From	То	7.00 	Count	Sample/Core Description	FID	PID		
SD006B-1	0	2	4	4-1-2-3	Black fill slag material, slightly clayey. Moist.	6	12		
					Abandon hole at 2 ft, strong organic odor.				
<del>-</del>							<del></del>		
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		Date:

Ent'd by: SLW
Ck'd by: MES



Project No.	60	003.06	
Boring No.		D-007	
Page	1	of _	_1_

## General Information

Client: Ohio EPA	Boring No.: SD-007				
Site Location: South Dayton Dump, Dayton, Ohlo	Date(s) Drilled: February 26, 1996				
PSARA Geologist: C. Hall	Drilling Method / Borehole Size: 2.25-in. I.D. HSA/4.75 in.				
Drilling Contractor: CAS	Total Depth of Borehole (ft): 14				
Sampling Device: 2 x 24 in. split spoon	Depth to Water Observed During Drilling (ft):				
Headspace Screening Instrument: X PID X FID	Well installed: Yes X No Well No.:				

Sample No.	No. Sample Depth (ft) Blow Count Sample/Core Description		Head: Reading				
	From	То	Rec i)	Count	Sample/Core Description	FID	PID
SD007-1	0	2	20	2-3-4-6	Fill, coarse grained sand and gravel, large	5	3
	<u> </u>				amount slag material, loosely compacted.	<u> </u>	
SD007-2	2	4	10	7-5-2-2	Fill, sand and gravel, cinder slag material, burnt	5	1
<del>- 12</del>	<del> </del>				wood fragments. Loosely compacted.		
SD007-3	4	6	11	6-10-5-5	Sand, orangish-red, coarse grained, loosely	80	4
				 	compacted.		
SD007-4	6	8	10	2-1-1-1	Fill, sand, ash, black burnt wood fragments,	20	1
<del></del>	-				small amount slag material, loosely compacted.	·	<del> </del> -
SD007-5	8	_10	6	1-1-2-1	Fill, black sand, and ash, coarse grained sand,	100	3
·	-				small amount slag material, loosely compacted.		-
SD007-6	10	12	10	1-1-1-1	Fill, black sand and cinder, glass fragments,	300	2
· - · · ·	<del> </del>	<del> </del>	<u> </u>		loosely compacted, clay in shoe of spoon.	· · ·	<del> </del>
SD007-7	12	14	10	2-1-1-1	Clay, dark brown, minor amount of sand, wood	20	3
		ļ	<u> </u>		fragments at bottom of spoon, loosely		ļ
<del></del>	-		├		compacted coarse grained sand in shoe of		<del> </del>
	<del> </del>	<b></b>	<del> </del>	<u> </u>	spoon.	<del></del> _	-
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	Date: 3/27/96



Project No.	60003.06
Boring No.	MW-101
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Gen	eral	Info	rma	ition
401				

Client: Ohio EPA	Boring No.: MW-101
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: April 5, 1996
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 4.25-in. I.D. HSA/8.25 in.
Drilling Contractor: JEDI	Total Depth of Borehole (ft): 38
Sampling Device: N/A Logged from cuttings	Depth to Water Observed During Drilling (ft): 15
Headspace Screening Instrument: X PID   FID	Well Installed: 🔯 Yes 🗌 No Well No.:

	Sar	nple th (ft)	2			Heads	pace
Sample No.	<del></del>		Recovery (in)	Blow Count	Sample/Core Description	Reading	
	From	То	ď.			FID	PID
	0	11_			Clay; brown silty to sandy clay with organic	· .	
		<u> </u>			fragments and gravel. Concrete slabs at		
	ļ	<del> </del>		 	aurface.		
	11_	12			Cobble/boulder.		
	12	29			Sandy clay to clayey sand with gravel.	<del></del>	
	20						
<del></del>	29	38			Wet sand to silt. Very fine grained, gray plastic.		
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Project No. Boring No.		003,06 (W-10:	
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Client: Ohlo EPA	Boring No.: MW-102
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: April 8, 1996
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 4.25-In. I.D. HSA/8.25 In.
Drilling Contractor: JEDI	Total Depth of Borehole (ft): 32
Sampling Device: N/A Logged by cuttings	Depth to Water Observed During Drilling (ft): 10
Headspace Screening Instrument: ☐ PID ☐ FID	Well Installed: ☑ Yes ☐ No Well No.: MW-102

Sample Depth (ft)				Sample/Core Description	Headspace Reading (ppm)		
Sample No. From To	То	R. O.	Count	Sample/Core Description	FID	PID	
	0	10			Brown claysy top soil with silt and gravel.		
				<del></del>			
	10	15			Brown silty to sandy clay, wet.		
	15	32			Sand and gravel; coarse gravel and cobbles;		
		-			minor coarse sand. Damp to wet.		
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Project No.	60003.06
Boring No.	MW-103
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Client: Ohio EPA	Boring No.: MW-103
Site Location: South Dayton Dump, Dayton, Ohio	Date(s) Drilled: April 9, 1996
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 4.25-in. I.D. HSA/8.25 in.
Drilling Contractor: JEDI	Total Depth of Borehole (ft): 32
Sampling Device: N/A Logged by cuttings	Depth to Water Observed During Drilling (ft): 10
Headspace Screening Instrument;  PID FID	Well Installed: 🕱 Yes 🗆 No Well No.: MW-103

Sample No.	San Dept	nple th (ft)	Recovery (in)	Blow	Sample/Core Description	Headspace Reading (ppm)	
	From	То	Rec.	Count	Sample/Core Description	FID	PID
	0.	8			Clay; brown sandy clay with gravel.		
	8	12			Clay; brown sandy clay, damp to wet.		
	12	32	<u> </u>		Sand and gravel; very few cuttings.		
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1		Date: 4/30/96



Project No.	60003.06	
Boring No.	MW-101A	
Page _		

Client: Ohlo EPA	Boring No.: MW-101A Date(s) Drilled: May 7, 1996		
Site Location: South Dayton Dump, Dayton, Ohio			
PSARA Geologist: R. Stuck	Drilling Method / Borehole Size: 4.25-In. I.D. HSA/8.25 In.		
Drilling Contractor: JEDI	Total Depth of Borehole (ft): 35		
Sampling Device: N/A Logged from cuttings	Depth to Water Observed During Drilling (ft); 15		
Headspace Screening Instrument: ☐ PID ☐ FID	Well installed: X Yes No Well No.: MW-101A		

Sample No.	mple No.    Sample   Depth (tt)   Sample   Sample   Sample   Sample   Count   Count	nple th (ft)	Blow	Blow	0	Headspace Reading (ppm)	
Sample 140.		Sample/Core Description	FID	PID			
	0	8			Brown silty clay with gravel.		_
	8	15			Brown silty to sandy clay, moist to damp.		
	15	19		- <u></u>	Sand and gravel with cobbles. Few cuttings.		· · · · ·
	19	35			Gray to brown sandy silt. Wet. Some cuttings		
	-				plastic.		· · ·
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	Date: 5/13/96

APPENDIX B

Well Construction Diagrams

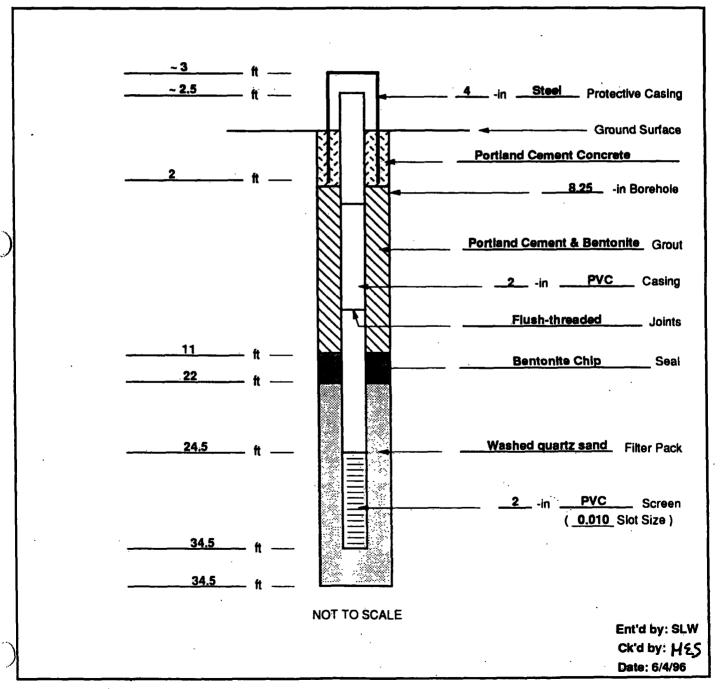


Project No. Well No. 60003.06 MW-101

#### **General Information**

Client: Ohio EPA	Well No.: MW-101
Site Location: South Dayton Dump, Dayton, Ohio	Date Completed: April 5, 1996
PSARA Geologist: R. Stuck	Drilling Method: 4.25-in. I.D. HSA/8.25 in.
Drilling Contractor: JEDI	Depth to Static Water (ft): 15.10 (4/23/96)

#### **Construction Details**





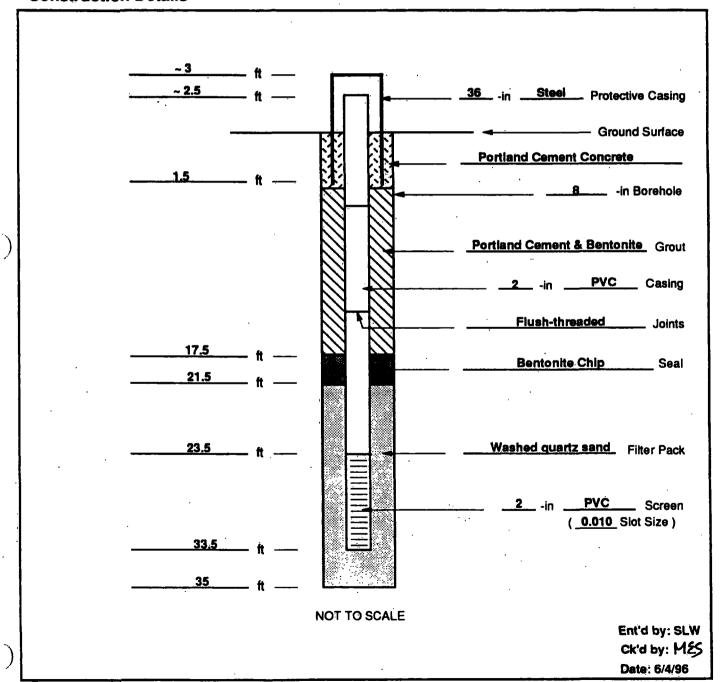
Project No.

60003.06 MW-101A

#### **General Information**

Client: Ohlo EPA	Well No.: MW-101A	
Site Location: South Dayton Dump, Dayton, Ohlo	Date Completed: May 7, 1996	
PSARA Geologist: R. Stuck	Drilling Method: 4.25-in. I.D. HSA/8.25 in.	
Drilling Contractor: JEDI	Depth to Static Water (ft): 16	

#### **Construction Details**





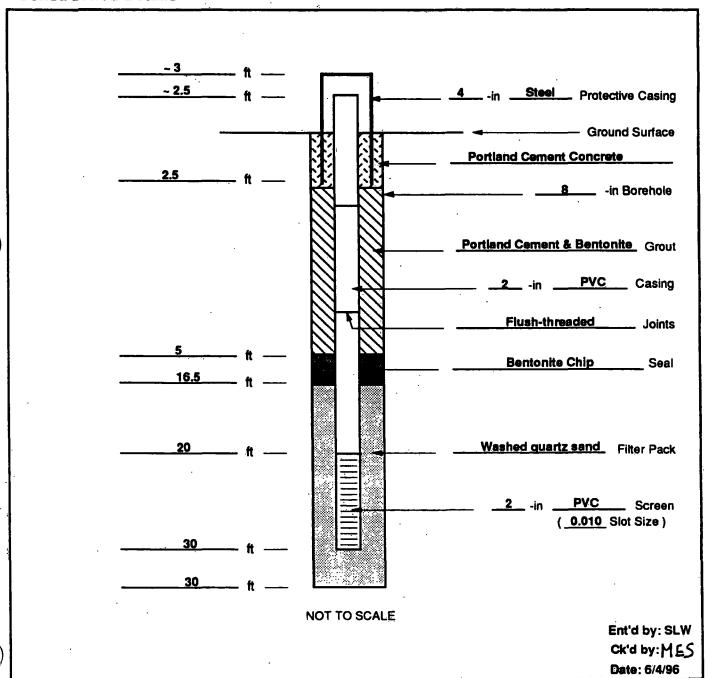
Project No.

60003.06 MW-102

#### **General Information**

Client: Ohlo EPA	Well No.: MW-102
Site Location: South Dayton Dump, Dayton, Ohio	Date Completed: April 8, 1996
PSARA Geologist: R. Stuck	Drilling Method: 4.25-in. I.D. HSA/8.25 in.
Drilling Contractor: JEDI	Depth to Static Water (ft): 6.97 (4/23/96)

#### **Construction Details**





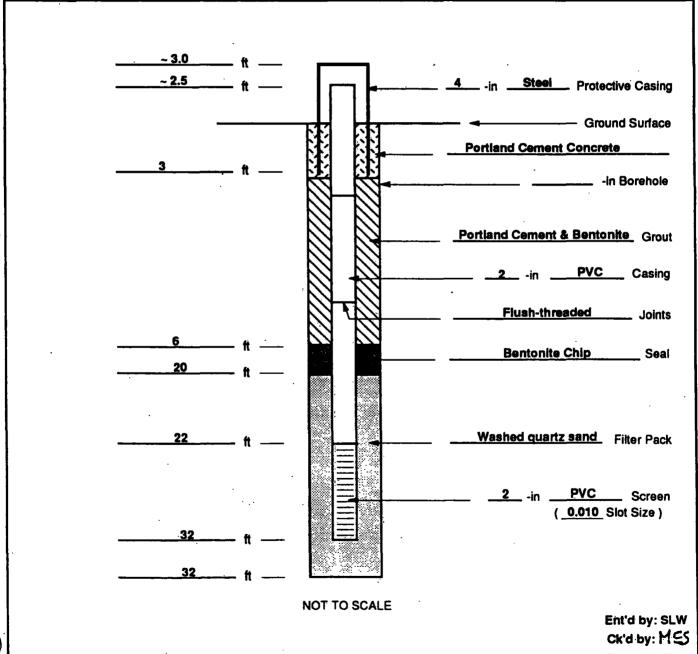
Project No.

60003.06 MW-103

#### **General Information**

Client: Ohio EPA	Well No.: MW-103
Site Location: South Dayton Dump, Dayton, Ohlo	Date Completed: April 9, 1996
PSARA Geologist: R. Stuck	Drilling Method: 4.25-in. I.D. HSA/8.25 in.
Drilling Contractor: JEDI	Depth to Static Water (ft): 5.80 (4/23/96)

#### **Construction Details**



Date: 6/4/96

# APPENDIX C ODNR Well Logs and Drilling Reports

# DNR 7802.94 36 3 0 TYPE OR USE PEN SELF TRANSCRIBING PRESS HARD

WELL LOG AND DRILLING REPORT
Ohio Department of Natural Resources
Divisor of Water, 1939 Fountain Square Drive
Columbus, Ohio 43224 Phone (614) 265-6739

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Permit Number

COUNTY MEATTECNIEPY	TOWNSH	IP_ <u>//</u>	SECTION/LOT No(Circle One)
NER/BUILDER SOVITI: A 711 Terri Dunici (Cade One or Both) First Last	PROPERI (Address o	TY ADDRE	ESS 1975 DE YESTE PE JONE PAINE OFFICE City
LOCATION OF PROPERTY HAT TON CHILL			
		STRUC	FION DETAILS
CASING (Length below grade) Borehole Diameter 7/2	_in.	LIIn	GROUT
			Material 11/1/10/ Electron Volume used 5 8/105  Method of installation 7 ELMINUE
	ckness	in,	
Type: 1 Steel 1 Galv. 2 PVC 1 Other		<u> </u>	GRAVEL PACK (Filter Pack)
Joints: Threaded Welded Solvent Solven			Material #5 SPAID Volume used 5 /5 BAC5  Method of installation CRHVITY
	•	in.	Depth: placed from 32 ft. to 20 ft
SCREEN			Pitiess Device
Type (wire wrapped, louvered, etc.) Materia	1_ <i>PVC</i>		Use of Well MONITOR
Lengthft. Diameter	- <del></del>		☐ Rotary ☐ Cable ☑ Augered ☐ Driven ☐ Dug ☐ Other
	SlotC	<u> </u>	Date of Completion 4-9-916
WELL LOG* INDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERED	<u> </u>	<del></del>	WELL TEST  ☐ Bailing ☐ Pumping* ☐ Other
Show color, texture, hardness, and formation:	نو <i>لا لا</i> لا_	<u>#03</u>	☐ Bailing ☐ Pumping* ☐ Other
sandstone, shale, limestone, gravel, clay, sand, etc.	From	То	Drawdown the Drawd
GRAVEL BASE	0	a	Measured from: ☐ top of casing ☐ ground level ☐ Other
Clau: Brown Silty Sandy	2	8	Static Level (depth to water)ft. Date:ft. Oute:
Black to Grey Silty Clay	8	17	
Yack to GREY SILTY			*(Attach a copy of the pumping test record, per section 1521.05, ORC)
CLAY-LESS SILTY	17	20	Type of pump
Brown SAMINE GRAVEL			Pump set atft Pump installed byft
W/Cohhles: WET	20	25	WELL LOCATION
Brown Sand & GRAVEL			Location of well in State Plane coordinates, if available:
	25	27	Elevation of wellft./m. Datum plain: □NAD27 □NAD83
Brown Sond & GRAVEL			Source of coordinates: GPS GSurvey Gther
CIDIA, CUICE -	7.7	77	Sketch a map showing distance well lies from numbered state highways, street intersections, county roads, buildings or other notable landmarks.
W/Cobbles: WET	01	30	PEND CONTRETE North FORMER AUTO
BTH 32'			PAP SALVAGE YARD
WATER ON RODS 20'	ļ ——	<del> </del>	mwl/ ( ) '
WATER AT COMP. 18'			W±103/
	1		1' / \
	<del> </del>	<del> </del>	' \
			DRYDEN -
*(If additional space is needed to complete well log, use next consecu-	utively-numb	ered form.)	I hereby certify the information given is accurate and correct to the best of my knowledge.
Ing Firm Jones Environmental.	_		
		J	Signed Many Suylor
Address 40 BOX 190		<u> </u>	Date 4-22-96 /
- UEOZOUJEZ INI W	1704	<b>'</b>	ORU Particular Alambia

# 1914.5 TYPE OR USE PEN SELF TRANSCRIBING PRESS HARD

WELL LOG AND DRILLING REPORT
Ohio Department of Natural Resources
Divison of Water, 1939 Fountain Square Drive
Columbus, Ohio 43224 Phone (614) 265-6739

Permit	Number

			Tomat Number
COUNTY MONTOCAPERY	TOWNSH	IP	SECTIONLOT No.
LEDWINS SOUTH APPLICAL MINE	,	D/ 4050	Concle One)
(Circle One or Both)  First  Liest	(Address (	IY ADDR	ESS 1975 1-12 DE VIJENTE ANTRAINE CHI
OCATION OF PROPERTY	7 N	CCRE	TIME CHIC ZoCom+4
	CON	STRUC	TION DETAILS
57,5111G	_in.	1445	GROUT
	•		Material Rest Track & BENT Volume used 5 BEGS
②Diameterin. Length*tt. Wall Thi	ickness	IN	Method of installation 7 R/A/IVI / E  Depth: placed from /4 ft. to /
Type Steel Galy PVC	r		
			Material #5 5/1/1/ Volume used 3 1/3 6225
Joints: Threaded Welded T Solvent D Other	r	<del></del>	Method of installation GPAVITY
· · · · · · · · · · · · · · · · · · ·	:kness	in.	Depth: placed from 30 ft. to 18
SCREEN	DUC	,	Pitiess Device
Type (wire wrapped, louvered, etc.) Materia	11 <u>- Z-Z-L</u> 3	in	Use of Well // // // // // // //   Dug   Other
	3iot <u>- 0</u>	10	Date of Completion 4-8-94
WELL LOG*			WELL TEST
NDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERE	A	#,,,,	☐ Bailing ☐ Pumping* ☐ Other
Show color, texture, hardness, and formation: sandstone, shale, limestone, gravel, clay, sand, etc.	From	To	Test rate NA gpm Duration of test hr
<del>- 1\</del>	1-	1	Drawdown ☐ top of casing ☐ ground level ☐ Other ☐
Brown Silty Clay WERAVEL	10	10	Static Level (depth to water)ft. Date:
Brown Silty to Sandy			Quality (clear, cloudy, taste, odor)
Livet clay	10	15	
had a Coourt dance		1	*(Attach a copy of the pumping test record, per section 1521.05, ORC)
and & Gravel, coarse	-		PUMP  Type of pump VA Capacity on
Gravel W/COBBLES	1/5_	3>	Type of pump
			Pump installed by
			WELL LOCATION
			Location of well in State Plane coordinates, if available:
	<del></del>	<u> </u>	Zone xy
-	<del>!</del>		Elevation of wellft./m. Datum plain:   NAD27   NAD83
BTH 32			Sketch a map showing distance well lies from numbered state highways,
SETTWELL AT 30'	Ī		street intersections county made huildings or other notable landmade
	<del>                                     </del>		PAD PAD North FURTHER ALLTO SALVAGE YARD ACCESS.
WATER ON RODS 15'	<u> </u>	<del> </del>	ACCESS POAD >
WATER AT COMP. 10'	<u> </u>		SCAO !
			THE COLUMN THE STATE OF THE STA
	+	<del>                                     </del>	
	<del> </del>	<del> </del>	Į <sup>†</sup> <b>±</b> √ / / / / / / / / / / / / / / / / / / /
	<u>.</u>		mw#
	1		DRYDENI DRYDENI
	+	<del> </del>	ROAD -
"If additional space is needed to complete well-log, use next consec	iglisanhi musech	aged from \	South  I hereby certify the information given is accurate and correct to the best of my knowledge.
	1	erea ronn.;	Ma. 11 1
ing Firm Jones KNUICOnmental L		9	Signed Alay Say (81)
Marine PO BOX 190		-	Dete 4-22-96
City, State, Zip VERSAILLES, IN 470	14/2		ODH Registration Number

#### TYPE OR USE PEN 1617C SELF TRANSCRIBING PRESS HARD

### WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources
Divison of Water, 1939 Fountain Square Drive
Columbus, Ohio 43224 Phone (614) 265-6739

Permit Number TOWNSHIP ///A/1/1 SECTIONLOT No.  $L m \Delta$ PROPERTY ADDRESS $_{\perp}$ MY RAINE LOCATION OF PROPERTY. CASING (Length below grade) Borehole Diameter. Wall Thickness SCA YC in. Material TECH 2007 BEAUT. Volume used in. Length\* 23 ft. 2 Diameter Wall Thickness... in. Method of installation\_ THIMANIE in. Length 1 Depth: placed from\_\_\_ Galv. Steel Type: [2] [2] 2 Other **GRAVEL PACK (Filter Pack)** Material #5 SAJUA Volume used Welded Joints: Threaded Solvent Method of installation GRALITY 2 Other Liner: Wall Thickness\_ in. Depth: placed from\_\_ SCREEN Pitless Device □ Adapter ☐ Preassembled unit Material \_ Use of Well\_ MONITOR Type (wire wrapped, louvered, etc.) ☐ Rotary ☐ Cable MAugered Driven Dug Length Diameter 4-5-96 Date of Completion Set between ft. and **WELL LOG' WELL TEST** INDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERED. □ Bailing □ Pumping¹ ☐ Other\_ MUNTH Show color, texture, hardness, and formation: Test rate gpm **Duration of test** sandstone, shale, limestone, gravel, clay, sand, etc. From To Drawdown Measured from: top of casing ground level ☐ Other . Static Level (depth to water)\_ 0 Quality (clear, cloudy, taste, odor) \*(Attach a copy of the pumping test record, per section 1521.05, ORC) PUMP Type of pump Capacity Pump set at VERY FINE Pump installed by 29 Location of well in State Plane coordinates, if available: Elevation of well ft./m. Datum plain: NAD27 □NADR3 Source of coordinates: 

GPS 

Survey □ Other Sketch a map showing distance well lies from numbered state highways, street intersections, county roads, buildings or other notable landmarks. CONCRETE North FORMER AUTO SALVAGE YARD CREAT ACCESS MIAM DATER RIVER ROAD \**1*01 South rte wall log, use next consecutively numbered form.) I hereby certify! **ODH Registration Number** Completion of this form is required by section 1521.05, Ohio Revised Code - file within 30 days after completion of driffing.

ORIGINAL COPY TO - ODNR. DIVISION OF WATER. 1939 FOUNTAIN SO DRIVE COI S OHIO 43224 ection 1521.05, Ohio Revised Code - file within 30 days after completion of drilling

# DNR 7802.94 TYPE OR USE PEN SELF TRANSCRIBING PRESS HARD

### WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources
Divison of Water, 1939 Fountain Square Drive
Columbus, Ohio 43224 Phone (614) 265-6739

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C	Ü	•	•	÷	ب	_

Permit Number\_ TOWNSHIP //7/a/2 2/ SECTIONLOT No. PROPERTY ADDRESS 472. CONSTRUCTION DETAILS Borehole Diameter. Wall Thickness Sch YC in. Material HOY- DILLO in. Length\* > / ft. Volume used. Diameter in. Method of installation. Wall Thickness 2 Diameter Depth: placed from Type: Steel Galv. **GRAVEL PACK (Filter Pack)** 2 Welded Joints: Method of installation 3291-177 2 Other Wall Thickness\_ in. Depth: placed from Liner: SCREEN Pitless Device □ Adapter Preassembled unit MONITOR Material Use of Well\_ Type (wire wrapped, louvered, etc.) MAugered Driven Dug Dother. in. TRotary Cable Length Diameter Date of Completion **WELL TEST** ☐ Other INDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERED Bailing Pumping <u> 1010</u> MW Show color, texture, hardness, and formation: Test rate **Duration of test** sandstone, shale, limestone, gravel, clay, sand, etc. From To Drawdown Measured from: I top of casing around level ☐ Other GRAVEL BASE Static Level (depth to water)\_ BROWN SILTY SAMMY CLAY Quality (clear, cloudy, taste, odor). \*(Attach a copy of the pumping test record, per section 1521.05, ORC) Type of pump. BROWN SAND! GRAVEL "KOBBLES Pump set at BROWN SAND E GRAVEL Pump installed by Location of well in State Plane coordinates, if available: Elevation of well ft./m. Datum plain: NAD27 □NAD63 Source of coordinates: GPS Survey □ Other Sketch a map showing distance well lies from numbered state highways, street intersections, county roads, buildings or other notable landmarks. FORMER AUTO SALVAGE YARD ACCESS ROAD DRYDEN ROAD to complete well log, use next consecutively numbered form.) 10 BOX 190 City, State, Zip VERSAILLES, INDIANIA **ODH Registration Number** Completion of this form is required by section 1521.05, Ohlo Revised Code - file within 30 days after completion of drilling.

ORIGINAL COPY TO - ODNR. DIVISION OF WATER. 1939 FOUNTAIN SQ. DRIVE. COLS., OHIO 43224

#### WATER WELL SEALING REPORT OHIO DEPARTMENT OF NATURAL RESOURCES **Division of Water**

010 1324

1939 Fountain Square Drive

Columbus, Ohio 43224-9971 Voice: (614) 265-6739 Fax: (614) 447-9503

·	Circle One or Both	
Township (1)	Section/Lot Number	
on 1975 NOVNEN RAA	Street Name	·
F OHIO	Zip Code +4	
miles n, e, s, w	of nearest intersection	<del></del>
n the side	of DRYDEN PORD	······································
		4
e Plane N 🗆	ft. or m	ft. or m
ft. or m Datum Plai	in: 🗆 NAD27 🗀 NAD83	
☐ GPS ☐ Survey ☐ Other		
ODNR Well Log Number#	(circle of Copy attached? Yes of	(No
UCTION DETAILS Date	of measurements	
3/15	,	
	Length of casing 23'	
<i>co</i>		
₹E		· · · · · · · · · · · · · · · · · · ·
GRAVITY		
	Sealing Material	Volume
	BENT-CEMENT GREET	SC GAL
To		
	•	
? (Yes) or No (Circle one)		•
GOOD		
To	<del></del>	
	R WEIL	····
	R WEIL	
d 5-7-96 ABANDONED MONITO	P WEIL	
	ODH Registration #	
d 5-7-96 ABANDONED MONITO	ODH Registration #	
d 5-7-96 ABANDONED MONITO	N/A	

# APPENDIX D

Well Development Logs



Project No. <u>60003.06</u>
Well No. <u>MW-101</u>

#### **General Information**

Client: Ohio EPA	Well No.: MW-101
Site Location: South Dayton Dump, Dayton, Ohio	Date Developed: April 23, 1996 Time: 0845 to 1430
PSARA Technician(s): S. Walton	Weather: Rain, 45-60°F

#### **Well Volume Calculations**

Measuring Point: X Top of Casing  Other:	Measurement Instr.: ☐ Tape 🗶 Electronic ☐ O/W Probe
Depth to Water (ft): D1 = 15.10	Height of Water Column (ft): H = (D2 - D1) = 19.18
Depth to Well Bottom (ft): D2 = 34.28	Volume of Water in Well (gal): V = (H x F) = 3.13
Product Present: Yes X No	Depth to Product (ft): NA Product Thickness (in): NA

2" well: F = 0.163

4" well: F = 0.651

#### **Well Development Data**

	Weļi Volume	рН	Conductivity (µmho)	Temperature (°C)	Appearance / Odor
	First Bailer	8.84	400	11.0	Very silty, grey
ſ	Volume No. 1	8.61	514	10.8	Clearing
1	Volume No. 2	8.46	440	10.5	Silty, sandy - dry @ 3.5 gallons
	Volume No. 3	7.51	617	8.3	Grey, silty, sandy
	Volume No. 4	8.04	675	8.8	Grey, silty, sandy
ſ	Volume No. 5	7.71	699	9.2	Grey, silty, sandy
	Total Volume Purged (gal): 13			Well Pu	rged Dry: 🔼 Yes 🗌 No

Notes	<u>Hq</u>	Conductivity	Temperature	Appearance/Odor
Volume No. 6	8.44	472	11.0	Clear
Volume No. 7	8,47	431	10.0	Light/brown
Volume No. 8	8.48	385	10.0	Brownish
	depth to water	is 18.85. Well bottom	o to 18 feet, then purge at 36.13. Purged third	
- Depth to water 1	9.93 at 1345. I	ourged additional volu	me.	
- Notice obstruction	on in well whe	n attempt is made to p	urge additional volume	es with bailer.
1930 leave site.	Well undevelo	ped.		Ent'd by: DMW
4/24 Return to sit	e and purge w	ill volumes 6, 7, and 8		Ck'd by: MES
		· ·		Date: 5/21/96



Project No. Well No. 60003.06 MW-101A

#### **General Information**

Client: Ohio EPA	Well No.: MW-101A
Site Location: South Dayton Dump, Dayton, Ohio	Date Developed: May 10, 1996 Time: 1100 to 1155
PSARA Technician(s): S. Walton	Weather: Sunny, 70°F

#### **Well Volume Calculations**

Measuring Point: 🗵 Top of Casing 🔲 Other:	Measurement Instr.: Tape X Electronic O/W Probe
Depth to Water (ft): D1 = 10.52	Height of Water Column (ft): H = (D2 - D1) = 24.36
Depth to Well Bottom (ft): D2 = 34.88	Volume of Water in Well (gal): V = (H x F) = 3.97
Product Present: Yes X No	Depth to Product (ft): NA Product Thickness (in): NA

2" well: F = 0.163

4" well: F = 0.651

### **Well Development Data**

	Well Volume	рН	Conductivity (µmho)	Temperature (°C)	Appearance / Odor
ľ	First Bailer	7.93	300	17.2	Sandy, light brown; silty brown
ı	Volume No. 1	7.92	700	14.2	Lighter, sandy, silty brown
Τ	Volume No. 2	7.93	600	16.6	Silty brown
ſ	Volume No. 3	7.90	1400	16.4	Silty brown
I	Volume No. 4	7.74	1022	18.3	Clearing; silty, light brown
	Volume No. 5	7.74	1002	17.0	Clearing; silty, light brown
	Total Volume Purged (gal): 40			Well Pu	rged Dry: 🗌 Yes 🔀 No

Notes	pH	Conductivity	Temperature	Appearance	
Volume No. 6	7.86	1005	16.2	Clearing, silty light brown	
Volume No. 7	7.75	1002	14.8	Clearing, silty light brown	
Volume No. 8	7.78	950	17,4	Clearing, silty light brown	
Volume No. 9	7.73	978	16.7	Clearing, silty light brown	
Volume No. 10	7.80	927	17.5	Purge water is mostly clear	
Bailed well. Rech	arge was in	stant. Stainless Stee	l bailer.		
Water in drum, Le	ave on site.				
				Ent'd by: DMW	
				Ck'd by: MES	
	"			Date: 5/23/96	



Project No.	60003.06
Well No.	MW-102

### **General Information**

Client: Ohio EPA	Well No.: MW-102
Site Location: South Dayton Dump, Dayton, Ohio	Date Developed: April 23, 1996 Time: 1050 to 1130
PSARA Technician(s): S. Walton	Weather: 50-60°F, rain.

#### **Well Volume Calculations**

Measuring Point: 🗷 Top of Casing 🔲 Other:	Measurement Instr.: ☐ Tape 🔀 Electronic ☐ O/W Probe
Depth to Water (ft): D1 = 6.97	Height of Water Column (ft): H = (D2 - D1) = 24.99
Depth to Well Bottom (ft): D2 = 31.96	Volume of Water in Well (gal): V = (H x F) = 4.07
Product Present: Yes X No	Depth to Product (ft): NA Product Thickness (in): NA

2" well: F = 0.163

4" well: F = 0.651

### **Well Development Data**

	Well Volume	рН	Conductivity (µmho)	Temperature (°C)	Appearance / Odor
	First Bailer	7.31	696	7.9	Silty, brown
Γ	Volume No. 1	7.25	707	8.6	Silty, brown
1	Volume No. 2	7.70	723	8.5	Silty, brown
Г	Volume No. 3	7.55	711	9.1	Silty, brown
Г	Volume No. 4	7.60	726	9.1	Clearing, slity after surging
Γ	Volume No. 5	7.56	745	9.3	Silty, surge
	Total Volume Purged (gal): 28			Well Pu	rged Dry: 🗌 Yes 🕱 No

Notes	pН	Conductivity	Temperature	Appearance
Volume No. 6	7.51	741	9.2	Clearing
Volume No. 7	7.57	746	9.2	Clear
	·			
· · · · · · · · · · · · · · · · · · ·				
		-		
				Ent'd by: DMW
				Ck'd by: MES
				Date: 5/21/96

FORM NO. 003.0



Project No. Well No. 60003.06 MW-103

#### **General Information**

Client: Ohio EPA	Well No.: MW-103
Site Location: South Dayton Dump, Dayton, Ohio	Date Developed: April 23, 1996 Time: 1000 to 1045
PSARA Technician(s): S. Walton	Weather: rain, 50-60°F

#### **Well Volume Calculations**

Measuring Point: X Top of Casing  Other:	Measurement Instr.: Tape X Electronic O/W Probe
Depth to Water (ft): D1 = 5.80	Height of Water Column (ft): H = (D2 - D1) = 26.31
Depth to Well Bottom (ft): D2 = 32.11	Volume of Water in Well (gal): V = (H x F) = 4.29
Product Present: Yes X No	Depth to Product (ft): NA Product Thickness (in): NA

2" well: F = 0.163

4" well: F = 0:651

#### **Well Development Data**

	Well Volume	pН	Conductivity (µmho)	Temperature (°C)	Appearance / Odor
Γ	First Bailer	8.2	420	8.0	Very silty brown
Γ	Volume No. 1	7.9	410	7.8	Very slity brown
Γ	Volume No. 2	7.9	430	7.9	Clearing
Γ	Volume No. 3	7.8	580	8.0	Silty
	Volume No. 4	7.8	650	8.2	Silty
Γ	Volume No. 5	7.74	700	8.2	Silty
Total Volume Purged (gal): ~40			)	Well Pu	rged Dry: 🗌 Yes 🕱 No

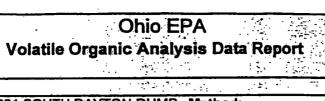
Notes	рН	Conductivity	Temperature	Appearance	
Volume No. 6	7.8	700	8.0	Clearing	
Volume No. 7	7.8	700	8.7	Clearing	·
Volume No. 8	7.8	709	8.4	Clear	
	<del></del>			<del></del>	
			······································		
	-				
			·		· .
					Ent'd by: DMW
	·				ckid by: MES
					Date: 5/21/96

### APPENDIX E

**Groundwater Analytical Report** 

Co.				
ORGANIC SAMPLE SUBMICION / RE	PORTFORM			
Date Received 96 02/2/	Lab Numb		8921	
Station/Location South Deviter 1. Sample Collected By From Rick Cis Bill to DERR	SOUTH PEBLE EIST DE	10001 -	- A	
Sample Collected By Frank Rick Cis	/e-"''(Co, Affiliation _	F34RH 1	is LUE C	antractor
Bill to	Report Ana	lysis to $\underline{\mathcal{K}}$	ick Cisle	r/DERZ
Division: [ ]DSW [ ]DDAGW [CDERF District: [ ]CDO [ ]NEDO [ ]NWDO		]DSIWM	Other	•
Sample Type: [Aqueous [ ]Sediment [ ]Tis	sue [ ]Oil [ ]Air Canister _ Other	[ ]Air Filter	XGrab [ ]Cor	nposite
YY MM DD H	H MM YY MM D	D. HH MM		19"
Date & Time of Sample Begin 96 103 1 79 /	6/10 End 4/1021	7 1612C	<del></del>	502)
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	plaint [/]Compliance [ ]S	urvey [ ]Amb	pient [ ]Other	_
Well Use: [ ]Industrial [ ]Public [ `]Priva	ate NA			
Sample Volume Submitted:# of Vials	# of Liter Jars		Other	•
Analysis Requested	Method	Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	)   1) 624      8260    524.2	96,02,22	96102126	AT
Volatile Organic Compounds (VOC): (GC)	[]601&602 []502.2	<u> </u>		
Base-Neutral & Acid Extractables: (GC/MS)	[]625 []8270	!!	·  !	
Base-Neutral Extractables (PAHs): (GC/MS)	[]625 []6270			
Acid Extractables (Phenols): (GC/MS)	[]625 []8270	!!		
Pesticides: (GC)	[]608 []8080		!	
Polychlorinated biphenyls (PCBs): (GC)	[ ]608 [ ]8080			<del></del> .
Chlordane: (GC)	[ ]608 [ ]6080			
Toxaphene: (GC)	[]608 []8080			
Others:				
Volatile Preserved with MHCL [ ]Sodium Thiosulfate	Bicassay Sar	nple Submitted: [	IYes Ma	
Comments: (\)				•
ĺ			•	•
	·	<del></del>		

DES QA approval included on computer printout



Sample:	<b>08921 SOUTH DAYTON DUMP</b>	Method:	624
Date Collected:	02/20/96	Collected by:	PASARA
Data Analyzed:	02/22/96	Analyzed by:	A.JAMAL
Matrix:	Water	Dilution:	1
File No:	V22206.D	Conc. Units:	ua/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	1.2	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	· ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	· ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ŅD	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1.2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1.2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1.2-Dichlorobenzene	ND	0.5
541-73-1	1.3-Dichlorobenzene	ND	0.5
106-46-7	1.4-Dichlorobenzene	ND ·	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1.1-Dichloroethane	0.5	0.5
107-06-2	1.2-Dichloroethane	ND	0.5
75-35-4	1.1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1.2-Dichloropropane	ND	0.5
142-28-9	1.3-Dichloropropane	ND	0.5
594-20-7	2.2-Dichloropropane	ND	0.5
563-58-6	1.1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	NĎ	0.5
100-41-4	Ethylbenzene	· ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



**08921 SOUTH DAYTON DUMP** Sample: Method: 624 **Date Collected:** 02/20/96 Collected by: **PASARA** Data Analyzed: 02/22/96 Analyzed by: A.JAMAL Matrix: Water Dilution: 1 V22206.D Conc. Units: File No: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	1.5	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	4.6	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	.O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND: Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:

### Ohio EPA

### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08921 SOUTH DAYTON DUMP** 

Number TICs found:

0

Concentration units:

ug/L

**EST. CONC** 

CAS NO. COMPOUND R. TIME

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

FEB 2 3 1995

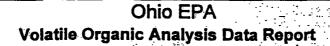
BY\_

OnioEPA @	Division of Environmen	Services				
ORGANIC SAMPLE SUBMISSION / REPORT FORM						
Date Received 96 102121	Lab Numbe	er	28924	1		
Station/Location South District Dump - SDGWOOD - C						
Sample Collected By PSARA / Matt Justice.  Bill to						
·		36017	74.CO1 111.CZ-	10010		
Division: [ ]DSW [ ]DCAGW   DERF	R []DHWM []DAPC [   []SEDO ≱HSWDO	]DSFMM		FCT		
Sample Type: Aqueous [ Sediment [ ]Tis		[ ]Air Filter	[]Grab []Co	mposite		
YY MM DD H	Other H MM YY MM D	DD EH MM				
Date & Time of Sample Begin 16102120 /	5 <i>1 i                                   </i>			22'		
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	plaint Acompliance [ ]S	Survey [ ]Amb	ient [ ]Other			
Well Use: [ ]Industrial [ ]Priva	ate NA					
Sample Volume Submitted: 2 # of Vials	# of Liter Jars		Other			
Analysis Requested	Method	Analyzed	Reported	Analyst		
Volatile Organic Compounds (VCC): (GC/MS)	1624 []8260 []524.2	96157122	9610726	(AT		
Volatile Organic Compounds (VCC): (GC)	[]601&602 []502.2	!!				
Base-Neutral & Acid Extractaties: (GC/MS)	[]625 []8270					
Base-Neutral Extractables (PAHs): (GC/MS)	[]625 []8270	!!				
Acid Extractables (Phenois): (GC:MS)	[]625 []8270	!				
Pesticides: (GC)	[]608 []8080	!!				
Polychlorinated biphenyls (PCEs): (GC)	[ ]eos [ ]soso		!!			
Chlordane: (GC)	[]608 []8080		!			
Toxaphene: (GC)	[ ]608 [ ]8080		!!			
Others:	l					
Volatile Preserved with AHCL [ Scdium Thiosulfate		nple Susmitted: [ ]				
Comments: Der Stew Martin Underze per Stew Martin U Bhatt, Data win be use amount at lend Space	d as a Screening a air Isubely	in whi	th TRO due to H	Longs		
DES QA approval included on computer printout						

Sample:O8924 SOUTH DAYTON DUMP Method:624Date Collected:02/20/96Collected by:PSARAData Analyzed:02/22/96Analyzed by:A.JAMAL

Matrix:WaterDilution:1File No:V22204.DConc. Units:ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	0.8	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenżene	· ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chlöroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	· ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	1.2	0.5
107-06-2	1,2-Dichloroethane	0.5	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	0.9	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



Sample: **08924 SOUTH DAYTON DUMP** Method: 624 Date Collected: 02/20/96 Collected by: **PSARA** Data Analyzed: 02/22/96 Analyzed by: A.JAMAL Matrix: **Dilution:** 1 Water

File No: V22204.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachioroethene	ND	0.5
108-88-3	Toluene	1.9	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	0.6	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments: Data will be used as a screening only, due to large amount of head space & air bubbles.



### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08924 SOUTH DAYTON DUMP** 

Number TICs found:

1

Concentration units:

ua/L

CAS NO.	COMPOUND	R. TIME	EST. CONC
000066-25-1	Hexanal	12.29	2.35

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

FEB 2 3 1996

Si Camment

	OhioEPA ®	Division of Env	ۇ ironmen	al Services	& P.	<del>-</del>	
	ORGANIC SAMPLE SUBMISSION / RE			002·	50	13887	
	Date Received 96 102 21	Ĺ	ab Numbe	erO	8925		
	Station/Location South Dayton Dur	np-506 W			Sucining	1446	
	Sample Collected By PSARA /ing# 3:		ffiliation _ leport Ana			DERR	·
Bill to Report Analysis to Rick Cister   DER  Division: [ ]DSW [ ]DDAGW [ ]DERR [ ]DHWM [ ]DAPC [ ]DSIWM Other  District: [ ]CDO [ ]NEDO [ ]NWDO [ ]SEDO * SWDO						•	
•	Sample Type: Aqueous [ ]Sediment [ ]Ti	ssue [ ]Oil [ ]Air Other	Canister	[ ]Air Filter	Grab []Co	mposite	
•	Date & Time of Sample Begin 961021201			D HH MM		321	
	Sample Use: [ ]Rush [ ]Litigation [ ]Com	plaint LComplia	nce []S	urvey []Amb	ient [ ]Other	٠.	
	Well Use: [ ]Industrial [ ]Public [ ]Priv	ate NA					
Sample Volume Submitted: 2 # of Vials# of Liter JarsOther							
	Sample Volume Submitted: 2# of Vials	# of Liter J	ars	.,	Other		
	Sample Volume Submitted: 2 # of Vials Analysis Requested	# of Liter J	ars	Analyzed	Other	Analyst	
,		·			Reported	Analyst	
	Analysis Requested	Method			Reported	Analyst	
	Analysis Requested  Volatile Organic Compounds (VOC): (GC/MS)	Method []8260 []601&602	[]524.2		Reported	Analyst	
	Analysis Requested  Volatile Organic Compounds (VOC): (GC/MS)  Volatile Organic Compounds (VOC): (GC)	Method []8260 []601&602	[]524.2		Reported	Analyst	
	Analysis Requested  Volatile Organic Compounds (VOC): (GC/MS)  Volatile Organic Compounds (VOC): (GC)  Base-Neutral & Acid Extractables: (GC/MS)	Method [ ]8260 [ ]601&602	[]524.2 []502.2 []8270		Reported  46102126	Analyst	
	Analysis Requested  Volatile Organic Compounds (VOC): (GC/MS)  Volatile Organic Compounds (VOC): (GC)  Base-Neutral & Acid Extractables: (GC/MS)  Base-Neutral Extractables (PAHs): (GC/MS)	Method []624 []8260 []601&602  []625 []625	[ ]524.2 [ ]502.2 [ ]8270 [ ]8270		Reported  46102126	Analyst	
	Analysis Requested  Volatile Organic Compounds (VOC): (GC/MS)  Volatile Organic Compounds (VOC): (GC)  Base-Neutral & Acid Extractables: (GC/MS)  Base-Neutral Extractables (PAHs): (GC/MS)  Acid Extractables (Phencis): (GC/MS)	Method []624 []8260 []601&602 []625 []625 []625	[ ]524.2 [ ]502.2 [ ]8270 [ ]8270 [ ]8270		Reported  46102126	Analyst	
	Analysis Requested  Volatile Organic Compounds (VOC): (GC/MS)  Volatile Organic Compounds (VOC): (GC)  Base-Neutral & Acid Extractables: (GC/MS)  Base-Neutral Extractables (PAHs): (GC/MS)  Acid Extractables (Phencis): (GC/MS)  Pesticides: (GC)	Method []624 []8260 []601&602 []625 []625 []625	[]524.2 []502.2 []8270 []8270 []8270		Reported  461c2126  1 1 1	Analyst	

Comments:
Comments:
Comments:
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Comments
Comm

DES QA approval included on computer printout

Others:

ug/L

Sample: **08925 SOUTH DAYTON DUMP** Method: 624 **Date Collected:** 02/20/96 Collected by: **PASARA** Data Analyzed: 02/22/96 Analyzed by: A.JAMAL Matrix: Water Dilution: File No: V22205.D Conc. Units:

CAS NO. COMPOUND CONC DL 71-43-2 Benzene 1.9 0.5 108-86-1 Bromobenzene ND 0.5 74-97-5 ND Bromochloromethane 0.5 Bromodichloromethane 75-27-4 ND 0.5 75-25-2 Bromoform ND 0.5 74-83-9 **Bromomethane** ND 0.5 104-51-8 N-Butylbenzene ND 0.5 135-98-8 Sec-Butylbenzene ND 0.5 98-06-6 Tert-Butylbenzene ND 0.5 Carbon tetrachioride 56-23-5 ND 0.5 108-90-7 Chlorobenzene ND 0.5 75-00-3 Chloroethane ND 0.5 67-66-3 Chloroform ND 0.5 74-87-3 Chloromethane ND 0.5 95-49-8 2-Chiorotoluene ND 0.5 106-43-4 4-Chiorotoluene ND 0.5 124-48-1 Dibromochloromethane ND 0.5 96-12-8 1,2-Dibromo-3-chloropropane ND 0.5 106-93-4 1.2-Dibromoethane ND 0.5 74-95-3 Dibromomethane ND 0.5 95-50-1 1.2-Dichlorobenzene ND 0.5 541-73-1 1.3-Dichlorobenzene ND 0.5 106-46-7 ND 0.5 1,4-Dichlorobenzene 75-71-8 ND Dichlorodifluoromethane 0.5 75-34-3 1,1-Dichloroethane 2.8 0.5 ND 107-06-2 0.5 1.2-Dichloroethane 75-35-4 1.1-Dichloroethene ND 0.5 156-59-4 Cis-1.2-dichloroethene 1.6 0.5 156-60-5 Trans-1,2-dichloroethene ND 0.5 78-87-5 ND 1.2-Dichloropropane 0.5 142-28-9 ND 1,3-Dichloropropane 0.5 594-20-7 2,2-Dichloropropane ND 0.5 563-58-6 1,1-Dichloropropene ND 0.5 10061-1-5 Cis-1,3-dichloropropene ND 0.5 10061-02-6 Trans-1,3-dichloropropene ND 0.5 100-41-4 Ethylbenzene ND 0.5 87-68-3 Hexachlorobutadiene ND 0.5



Sample: **08925 SOUTH DAYTON DUMP** Method: 624 Date Collected: 02/20/96 Collected by: **PASARA** Data Analyzed: 02/22/96 Analyzed by: A.JAMAL Matrix: Water Dilution: 1 V22205.D Conc. Units: File No: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyitoluene	ND	0.5
75-09-2	Methylene chloride	· ND	0.5
91-20-3	Naphthalene	NĎ	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	2.3	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	· ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	0.9	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments: Data will be used as a screening only, due to large amount of head space & air bubbles.



### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08925 SOUTH DAYTON DUMP** 

Number TICs found:

2

Concentration units:

Ja/L

CAS NO.	COMPOUND	R. TIME	EST. CONC
000115-07-1	Propene	1.68	67.19
000075-28-5	Isobutane	1.88	6.08
		•	
•		-	
	·		

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

FEB 2 3 1996

See Comments

ORGANIC SAMPLE SUBMISSION / REPORT FORM							
Date Received 96 102123		Lab Numb	er	08921	0		
Station/Location South Daylon Dunie - Bo	REHOLE 001	@ 34'	SDER	1004			
Sample Collected By ZKH STICK /PShen B.	4142411/0004				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
Bill to DEPP	<del></del>		alysis to _ 2"				
Division: [ ]DSW [ ]DDAGW MDERR [ ]DHWM [ ]DAFC [ ]DSIWMOther District: [ ]CDO [ ]NEDO [ ]NEDO [ ]SEDO [ MSWDO							
Sample Type: [Aqueous [ ]Sediment [ ]Tis	ssue [ ]Oil [ ]/	Vir Canister	[ ]Air Filter	[]Grab []Co	mposite		
YY MM DD H Date & Time of Sample Begin 96 12 121 /		YY MM [   <u>                                    </u>	DD HH MM 211 14130				
Sample Use: []Rush []Litigation []Comp	olaint [ ]Compli	ance (VS	, Survey [ ]Ami	pient [ ]Other			
Weil Use: [ ]Industrial [ ]Public [ ]Priva	ate 10/4						
Sample Volume Submitted: 2# of Vials	# of Liter	Jars		Other			
Analysis Requested	Method		Analyzed	Reported	Analyst		
Volatile Organic Compounds (VOC): (GC/MS)	M624 []8260	[]524.2	ik 02127	<u>96 103 1 C l</u>	A		
Volatile Organic Compounds (VOC): (GC)	[]601&602	[]502.2	<u></u>	<u> </u>			
Base-Neutral & Acid Extractables: (GC/MS)	[ ]625	[]8270					
Base-Neutral Extractables (PAHs): (GC/MS)	[]625	[ ]8270					
Acid Extractables (Phenols): (GC/MS)	[]625	[]8270					
Pesticides: (GC)	[ ]eo8	[]8080	i				
Polychlorinated biphenyls (PCBs): (GC)	[ ]608	0303[]	!!				
Chlordane: (GC)	[ ]e08	0305[]					
Toxaphene: (GC)	[ ]608	0803[]	!!	!!			
Others:	· 						
Volatile Preserved with MHCL [ ]Sodium Thiosulfate			ple Submitted: [ ]				
Comments: SAMFLE VERY SILTY.  1 Vial submitted with Reads  bulles. KLH	rurbio;	runy, uai 5	e <i>fferveste</i> climitte	ric ) wath C	ii		

DES CA approval included on computer printout

FD001 341

		·	
Sample:	<b>08926 SOUTH DAYTON DUMP</b>	Method:	624
Date Collected:	02/21/96	Collected by:	PSARA
Data Analyzed:	02/27/96	Analyzed by:	A.JAMAL
Matrix:	Water	Dilution:	1
File No:	V22721.D	Conc. Units:	ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Berzene	0.9	0.5
108-86-1	Bromobenzené	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Brcmodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Brcmomethane	ND	. 0.5
104-51-8	N-Eutylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Ter:-Butylbenzene	ND	0.5
56-23-5	Carson tetrachloride	ND	<b>0.5</b> .
108-90-7	Ch!crobenzene	ND	0.5
75-00-3	Chicroethane	ND	0.5
67-66-3	Chicroform	ND	0.5
74-87-3	Chicromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND .	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND .	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	. ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	0.8	0.5
107-06-2	1,2-Dichloroethane	0.9	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ŃD	0.5
78-87-5	1,2-Dichloropropane	· ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ŃD	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

34

Sample: **08926 SOUTH DAYTON DUMP** Method: 624 Date Collected: PSARA 02/21/96 Collected by: Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Dilution: Water 1 File No: V22721.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropyibenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	-ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0:5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	1.5	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	· 2.8	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND .	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments: Data will be used as a screening, due to a large amount of head space.

### Ohio EPA

### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08926 SOUTH DAYTON DUMP** 

Number TICs found:

1

Concentration units:

ug/L

 CAS NO.
 COMPOUND
 R. TIME
 EST. CONC

 000115-11-7
 1-Propene, 2-methyl 2.02
 3.74

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

MAF 31 1996

BY 4 McDaniel

Date Received 96102126	Lab Numbe			·-		
Station/Location South Digital Dump - SD005 - SDRI-003  Sample Collected By PSARA / RICK CISLER Affiliation Ohio EPA, DERR  Bill to Report Analysis to Steve Martin, DERR						
Sample Collected By PSARA / RICK	CISLER Affiliation	Ohio El	PA, DERR	D 1-010		
pii to	Report Ana	nysis to <u></u>	ve Martin	DERK		
Division: [ ]DSW [ ]DDAGW [ ]DERF District: [ ]CDO [ ]NEDO [ ]NWDO		IDSIWM	Other			
Sample Type: [LAqueous [ ]Sediment [ ]Tis	Other		[]Grab []Cor	nposite		
YY MM DD H Date & Time of Sample Begin 96 102 123 \$\\\ \empty & \text{Time of Sample}  \text{Begin } \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	H MM YY MM E 14100 End 9410-712	D HH MM				
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	olaint [#]Compliance [ ]S	survey [ ]Amb	oient [ ]Other			
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate					
Sample Volume Submitted: 2 # of Vials	# of Liter Jars		Other	. •		
Analysis Requested	Method	Analyzed	Reported	Analyst		
Volatile Organic Compounds (VOC): (GC/MS)	[4]624 []8260 []524.2	96,02,27	<u>96 103101</u>	A		
Volatile Organic Compounds (VQC): (GC)	[]601&602 []502.2					
Base-Neutral & Acid Extractables: (GC/MS)	[]625 []8270	!!	· !!			
Base-Neutral Extractables (PAHs): (GC/MS)	[ ]625 [ ]8270					
Acid Extractables (Phenols): (GC/MS)	[]625 []8270		!!			
Pesticides: (GC)	[]608 []8080		!			
Polychlorinated biphenyls (PCBs): (GC)	[]608 []8080	!!	!!			
Chlordane: (GC)	[]608 []8080	!!		· 		
Toxaphene: (GC)	[]608 []8080	!!	!			
Others:						
Volatile Preserved with [VHCL [ ]Sodium Thiosulfate Bioassay Sample Submitted: [ ]Yes [ ]No						
Comments: /\	ORI 003					
•				•		

DES QA approval included on computer printout

•	•			
Sample:	<b>08931 SOUTH DAYTON DUMP</b>	Method:	624	
Date Collected:	02/23/96	Collected by:	PSARA	
Data Analyzed:	02/27/96	Analyzed by:	A.JAMAL	
Matrix:	Water	Dilution:	1	
File No:	V22715.D	Conc. Units:	ug/L	

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND.	0.5
1.06-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND ·	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	. 0.5
1:0061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

624 Sample: **08931 SOUTH DAYTON DUMP** Method: Date Collected: 02/23/96 Collected by: **PSARA** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Water Dilution: 1 File No: V22715.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL.
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyitoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	ND	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ИD	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:



### Volatile Organic Analysis Data Report **Tentatively Identified Compounds**

Sample:

**08931 SOUTH DAYTON DUMP** 

Number TICs found:

1

1

Concentration units:

ug/L

CAS NO. COMPOUND R. TIME **EST. CONC** 

001066-40-6

Silanol, trimethyl-

6.66

1.10

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

MAR 61 1996 ,

UIIIUEPA	Division of Er				
ORGANIC SAMPLE SUBMISSION / RE	PORT FORM		(Mary )		•
Date Received 96 102 21		Lab Numbe	ar (3	8923	•
		FER	er <u> </u>	4	
Station/Location Trup B	ank s	SCL	· c 1996		
Sample Collected By FARA DEKK	-Sw/ 19b	Affiliation 4	0.j . : (0.j i) :=	2.612.6	- / - / -2-
Bill to DER12	<del></del>	Report Ana	alysis to '17/19	SICK CIS	sler   DEK
Division: [ ]DSW [ ]DDAGW XDERF	R []DHWM [	JDAPC [	JDSIWM	Othe	r
District [ ]CDO [ ]NEDO [ ]NWDO			•		
Sample Type:   Aguarus     Sediment     Ti	<i>[ 10ii   1</i> 14	ir Casistas	f 14:- ==		••
Sample Type: Aqueous [ ]Sediment [ ]Tis	ssue [ jOii [ jA Other	ui Cailister	[ ]Air rater	less fico	mposite
YY MM DD H	H MM		MM HH OC		
Date & Time of Sample Begin 16 102120	/ End		_//_	•	
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	olaint ( <b>V</b> omoli	ance ils	Survey : 14mh	ient i 10tha-	
Campic Occ. [ ]itasii [ ]aagazoii [ ]oonii	Signic Moonibil	2.100 [ ]0	idivey ; jruin	vietit [ ]Oniei	•
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate				
Sample Volume Submitted: / # of Vials		le		04	•
Sample Volume Submitted or vials	# or Liter	Jars	•	Other	•
Analysis Requested	Method		Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	14824 []8260	[ ]524.2	<u> 1961 يا 196</u>	96142126	本
Volatile Organic Compounds (VOC): (GC)	[]601&602	[ ]502.2	, ,	1 1	
<del></del>	1				
Base-Neutral & Acid Extractables: (GC/MS)	[]625	[ ]8270			
Base-Neutral Extractables (PAHs): (GC/MS)	[]625	[]8270	<b>i</b> , ,	, ,	
Base-Nesdai Exhaciasies (FATS). (OOINO)	[ ]025	[ ]02/0	<b> </b> '		
Acid Extractables (Phenols): (GC/MS)	[]625	[ ]8270	!!	!!	
Restinidan (CC)	13000	(10000	1		
Pesticides: (GC)	[]608	[]8080	'	'	
Polychlorinated biphenyls (PCBs): (GC)	[]608	[]8080	/		
Chlordane: (GC)	[ ]eos	[ ]8080	//		
Toxaphene: (GC)	[]608	[]8080			
Others:	<u> </u>				
Volatile Preserved with AHCL [  Socium Thiosulfale		Bioassay Sar	nple Submited; [ ]	Yes ANO	
Comments:				/	

DES CA approval included on computer printout



Sample: **08923 TRIP BLANK** Method: 624 Date Collected: 02/20/96 Collected by: PASARA Data Analyzed: 02/22/96 Analyzed by: A.JAMAL Matrix: Water Dilution: File No: V22208.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chioroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0,5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



**08923 TRIP BLANK** Sample: 624 Method: Date Collected: 02/20/96 Collected by: PASARA Data Analyzed: 02/22/96 Analyzed by: A.JAMAL Water Matrix: **Dilution:** V22208.D Conc. Units: File No: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-isopropyitoluene	ND .	0.5
75-09-2	Methylene chloride	0.8	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	ND	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:

### Ohio EPA

### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08923 TRIP BLANK** 

Number TICs found:

0

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Concentration units:

ua/L

CAS NO.

COMPOUND

R. TIME

EST. CONC

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

FEE 231

Page 1

Date Received 96/02/23	, Lab Numbe	erO	8928	
Station/Location THP BLVK Sample Collected By B. AIGHUTT OTHER Bill to PEGE	SOUTH DAYTON PUM.  96 Affiliation _  Report Ana	P FOX SAM COPA / S allysis to _ ZAC	recy un z wido/OBA K cistal	/21,22/96 <u>-</u> 0541/05
Division: [ ]DSW [ ]DDAGW [ ]DERF District: [ ]CDO [ ]NEDO [ ]NWDO		JDSIWM	Othe	ŕ .
Sample Type: MAqueous [ Sediment [ ]Tis	ssue [ ]Oil [ ]Air Canister Other	[ ]Air Filter	[ ]Grab [ ]Co	mposite
YY MM DD H Date & Time of Sample Begin 96/2/21	H MM YY MM D			
Sample Use: [ ]Rush [ ]Littgation [ ]Comp	olaint [ଏCompliance [생	Survey [ ]Ami	pient [ ]Other	
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate N/4			٠
Sample Volume Submitted:# of Vials	# of Liter Jars	-	Other	
Analysis Requested	Method	Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	[]624 []8260 []524.2	<u>96102127</u>	96103101	At
Volatile Organic Compounds (VOC): (GC)	[]601&602 []502.2	<u>i</u>	<u> </u>	
Base-Neutral & Acid Extractaties: (GC/MS)	[]625 []6270	!!	!!	
Base-Neutral Extractables (PAHs): (GC/MS)	[ ]625 [ ]6270	!!		
Acid Extractables (Phenols): (GC/MS)	[]625 []8270	!!		
Pesticides: (GC)	[]608 []8080	!!		
Polychlorinated biphenyls (PCEs): (GC)	[]608 []8080			
Chlordane: (GC)	[]608 []8080	!!		
Toxaphene: (GC)	[]608 []8080			
Others:		!!		
Volatile Preserved with MHCL [ Sodium Thiosulfate Comments:	Bioassay San	nple Submitted: [ ]	Yes Mo	

**08928 TRIP BLANK** Method: 624 Sample: Date Collected: 02/21/96 Collected by: **B.MARLATT** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Dilution: Matrix: Water 1

File No: V22714.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chiorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71 <del>-</del> 8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	. 0,5
75-35-4	1,1-Dichloroethene	ND.	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	<b>0.5</b>
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



### **Ohio EPA**

### Volatile Organic Analysis Data Report **Tentatively Identified Compounds**

Sample:

**08928 TRIP BLANK** 

Number TICs found:

0

65

Concentration units:

ug/L

EST. CONC

CAS NO. COMPOUND R. TIME

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

MAR @1 1996

BY J. Mc Canul

Page 1

	•		2924			
Date Received 96102126  MAR 0 5 1996  MAR 0 5 1996						
Station/Location South Dayton Do Sample Collected By Nager / Rich Green	-p - Taia-B	lank_		<del></del>		
Sample Collected By PIBEA / Rich Carl	Affiliation _	Ohio ER	on Mertin	DERR		
		•		•		
Division: [ ]DSW [ ]DDAGW [ 4DERF District: [ ]CDO [ ]NEDO [ ]NWDO		]DSIWM	Other	•		
Sample Type: [Aqueous [ ]Sediment [ ]Tis	ssue [ ]Oil [ ]Air Canister Other	[ ]Air Filter	[]Grab []Co	nposite		
YY MM DD H	H MM YY MM D	MM HH O				
Date & Time of Sample Begin 96 122 23	_/ End/_/_	_/!				
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	plaint [460mpliance [ ]S	Survey [ ]Ami	pient [ ]Other			
Well Use: [ ]Industrial [ ]Public [ ]Priva	TRIP BLANK			·		
Sample Volume Submitted:# of Vials	# of Liter Jars		Other			
Analysis Requested	Method	Analyzed	Reported	Analyst		
Volatile Organic Compounds (VOC): (GC/MS)	[X624 []8260 []524.2	961C21=7	96 103 101	女		
Volatile Organic Compounds (VOC): (GC)	[]601&602 []502.2	i	·1_1_			
Base-Neutral & Acid Extractables: (GC/MS)	[]625 []8270	'	!!			
Base-Neutral Extractables (PAHs): (GC/MS)	[]625 []8270					
Acid Extractables (Phenois): (GC/MS)	[]625 []8270					
Pesticides: (GC)	[]608 []8080	· !!				
Polychlorinated biphenyls (PCBs): (GC)	[]608 []8080	!	!!			
Chlordane: (GC)	[]608 []8080					
Toxaphene: (GC)	[ ]608 [ ]8080	!!				
Others:						
Volatile Preserved with [VHCL [ ]Scdium Thiosulfate Bioassay Sample Submitted: [ ]Yes [ ]No						
Comments: / \						
			•			
			_			

DES QA approval included on computer printout

Sample:	O8934 TRIP BLANK	Method:	624
Date Collected:	02/23/96	Collected by:	PSARA
Data Analyzed:	02/27/96	Analyzed by:	A.JAMAL
Matrix:	Water	Dilution:	1
File No:	V22716.D	Conc. Units:	ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND.	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	. Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	, ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND.	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	. ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

1	Ol	NO EP	Α	
Volatile	Organic A	Analys	is Dat	a Report

Sample: **08934 TRIP BLANK** Method: 624 Date Collected: 02/23/96 Collected by: **PSARA** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Water **Dilution:** 1 File No: V22716.D Conc. Units: ug/L

COMPOUND	CONC	DL
Isopropylbenzene	ND	0.5
4-isopropyltoluene	ND	0.5
Methylene chloride	ND	0.5
Naphthalene	ND	0.5
N-Propylbenzene	, ND	0.5
Styrene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND .	0.5
Toluene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5
	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Trichloroethene	ND	0.5
Trichlorofluoromethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
1,3,5-Trimethylbenzene	ND .	0.5
Vinyl chloride	ND	0,5
O-xylene	ND	0.5
Total m&p-xylenes	ND	0.5
	Isopropylbenzene 4-Isopropyltoluene Methylene chloride Naphthalene N-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane Trichloroethene Trichloroethene Trichloroethene Trichloroethene Trichlorofluoromethane 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Vinyl chloride O-xylene	Isopropylbenzene 4-Isopropyltoluene Mothylene chloride ND Naphthalene ND N-Propylbenzene Styrene ND 1,1,2-Tetrachloroethane ND Tetrachloroethene ND Toluene ND 1,2,3-Trichlorobenzene ND 1,1,1-Trichloroethane ND 1,1,2-Trichloroethane ND 1,2,4-Trichloroethane ND 1,1,2-Trichloroethane ND 1,1,2-Trichloroethane ND 1,1,2-Trichloroethane ND Trichloroethene ND Trichloroethene ND Trichlorofluoromethane ND Trichlorofluoromethane ND 1,2,3-Trichloropropane ND 1,2,4-Trimethylbenzene ND 1,3,5-Trimethylbenzene ND Vinyl chloride ND O-xylene

### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:

### Ohio EPA

### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08934 TRIP BLANK** 

Number TICs found:

0

Concentration units:

ug/L

CAS NO. COMPOUND R. TIME EST. CONC

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

MAR 31 1995

BY Milamil

UKGANIC PANIFLE SUBILIPSION I KE	PUKI FURIN	PĀ (	9		0
Date Received 96 P2,27	MAR 0 5 199	ab Numbe	r	<u> </u>	2
Station/Location Trip blank Sample Collected By Lab Bill to DERR	- meor bis	TRIC:		DERI . Martin	<u> </u>
Division: [ ]DSW [ ]DDAGW ADERR District: [ ]CDO [ ]NEDO [ ]NWDO	. [ ]DHWM [ ]	JDAPC [			-
Sample Type: Aqueous [ ]Sediment [ ]Tis	sue [ ]Oil [ ]Ai	ir Canister	[ ]Air Filter	[]Grab []Coi	nposite
YY MM DD Hi Date & Time of Sample Begin 96 102126	H MM	YY MM D	D HH MM		
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	laint <b>(30</b> 0mplia	ance []S	urvey []Amb	oier: [ ]Other	
Well Use: [ ]Industrial [ ]Public [ ]Priva	ite				
Sample Volume Submitted:# of Vials	# of Liter	Jars		Cther	·
Analysis Requested	Method		Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	H624 []8260	[ ]524.2	96021II	0, <sub>c1</sub> 83,01	A
Volatile Organic Compounds (VOC): (GC)	[]601&602	[ ]502.2	!!		
Base-Neutral & Acid Extractables: (GC/MS)	[ ]625	[ ]8270	!!		
Base-Neutral Extractables (PAHs): (GC/MS)	[]625	[ ]8270		'	
Acid Extractables (Phenols): (GC/MS)	[ ]625	[ ]8270			
Pesticides: (GC)	[]608	[ ]8080	!!		
Polychlonnated biphenyls (PCBs): (GC)	[]608	[ ]8080		'	
Chlordane: (GC)	[]608	[ ]8080	!!	!!	<del></del>
Toxaphene: (GC)	[]608	[ ]8080			
Others:			!!		<u></u>
Volatile Preserved with AHCL [ ]Sodium Thiosulfate Bioassay Sample Submitted: [ ]Yes [ ]No					
Shot water at lab					

DES QA approval included on computer printout

TRIP BIONE

### Ohio EPA

## Volatile Organic Analysis Data Report

Sample: **08943 TRIP BLANK** Method: 624 Date Collected: Collected by: LAB 02/26/96 Data Analyzed: Analyzed by: A.JAMAL 02/27/96 Dilution: Matrix: Water V22719.D Conc. Units: File No: ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND .	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ŅD	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	. 0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	.0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



الجار وأحطرا المحاد **08943 TRIP BLANK** Method: 624 Sample: **Date Collected:** LAB 02/26/96 Collected by: Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: **Dilution:** Water 1 File No: V22719.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND ·	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluène	ND	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	МD	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	, ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:



### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample: O8943 TRIP BLANK

Number TICs found:

0

Concentration units: ug/L

CAS NO. COMPOUND R. TIME EST. CONC

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

M-R 0,1 1996

Page 1

Date Received 96 102126	Lab Numbe		3930	<del></del>		
Station/Location South Dayton Do	- 509 NOO	5	•	·		
Sample Collected By Psen / Rick Cislo	<u> </u>	Ohio EPI				
Bill to	Report Ana	alysis to	ere Martin	DERR		
Division: [ ]DSW [ ]DDAGW [ JDERF District: [ ]CDO [ ]NEDO [ ]NWDO		JDSIWM	Other	• .		
Sample Type: [ Aqueous [ ]Sediment [ ]Tis	ssue [ ]Oil [ ]Air Canister Other	[ ]Air Filter	[ ]Grab [ ]Cor	nposite		
YY MM DD H Date & Time of Sample Begin 96 102 123	<del></del>	OD HH MM 31 12:100 10 15				
Sample Use: []Rush []Litigation []Comp	plaint [ ]Compliance [ ]S	Burvey [ ]Amb	pient [ ]Other	. •		
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate ·			•		
Sample Volume Submitted: # of Vials	# of Liter Jars		Other			
Analysis Requested	Method	Analyzed	Reported	Analyst		
Volatile Organic Compounds (VOC): (GC/MS)	1624 []8260 []524.2	96102127	96103101	本		
Volatile Organic Compounds (VOC): (GC)	[]601&602 []502.2		<u> </u>			
Base-Neutral & Acid Extractables: (GC/MS)	[]625 []8270	!!	!!			
Base-Neutral Extractables (PAHs): (GC/MS)	[]625 []8270					
Acid Extractables (Phenols): (GC/MS)	[]625 []8270					
Pesticides: (GC)	[]608 []8060		!			
Polychlorinated biphenyls (PCBs): (GC)	[]608 []8060			· 		
Chlordane: (GC)	[]608 []8080					
Toxaphene: (GC)	[]608 []8080			<u> </u>		
Others:						
Volatile Preserved with CL [ ]Sodium Thiosulfate Bioassay Sample Submitted: [ ]Yes [ ]No						
Comments: Sample 5 DGW005						
* Head space a cin bulleles in both Vials - Run as a Screening a he						
DES CA approval included on computer printout						
50	00/1A 221	1	•			

O8930 SOUTH DAYTON DUMP Method: Sample: 624 Date Collected: 02/23/96 Collected by: **PSARA** Data Analyzed: Analyzed by: 02/27/96 A.JAMAL Matrix: **Dilution:** Water 1 V22706.D Conc. Units: File No: ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	0.8	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND ·	0.5
74-83-9	Bromomethane	ND	0,5
104-51-8	N-Butylbenzene	ND	0.5
135-98 <del>-</del> 8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
1:24-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	. 0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	0.9	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	0.8	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



Sample: O8930 SOUTH DAYTON DUMP Method: 624 **Date Collected:** 02/23/96 Collected by: **PSARA** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Water Dilution: File No: Conc. Units: ug/L V22706.D

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	- 0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	2.4	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	1.5	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	0.6	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95 <del>-</del> 47 <b>-</b> 6	O-xylene	0.5	0.5
108-38-3	Total m&p-xylenes	1.2	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments: Data will be used as a screening, due to a large amount of head space & air bubbles.



## Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08930 SOUTH DAYTON DUMP** 

Number TICs found:

3

Concentration units: ug/L

_			
CAS NO.	COMPOUND	R. TIME	EST. C
000078-78-4	Butane, 2-methyl-	2.67	3.87
000109-66-0	Pentane	3.01	3.07
000006-37-7	Cyclonentane methyla	6 32	1 11

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compound Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name lister is not necessarily the name of the actual compound. Where less than 10 compare listed, no additional compounds were found.

APPR(

N&A

BY  $\leq$ 

Date Received 96102126 Lab Number 08132					
Station/Location South Dayfor Du	mp	-SDAWO	طه		
Sample Collected By PSARA / Cisker		$\_$ 1996 Affiliation $\_$	Ohio EP	4	<del></del>
Bill to		Report Ana	lysis to <u>5/2</u>	ve Marki	
Division: [ ]DSW [ ]DDAGW [ !)DERR [ ]DHWM [ ]DAPC [ ]DSIWMOther District: [ ]CDO [ ]NEDO [ ]NEDO [ ]SEDO [ !)SWDO					
Sample Type: [ )Aqueous [ ]Sediment [ ]Tis	ssue []	Oil [ ]Air Canister	[ ]Air Filter	[]Grab []Co	nposite
20(14170 11		Other			
YY MM DD H Date & Time of Sample Begin 96 102 123			D HH MM		
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	olaint (	Compliance [ ]S	urvey [ ]Amb	oient [ ]Other	
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate				
Sample Volume Submitted: # of Vials	#	of Liter Jars		Other	•
Analysis Requested		Method	Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	X624	[]8260 []524.2	<u> 96 102127</u>	<u> 1613 101</u>	母
Volatile Organic Compounds (VOC): (GC)	[]601&	602 [ ]502.2			
Base-Neutral & Acid Extractables: (GC/MS)	[]625	[ ]8270	!!		
Base-Neutral Extractables (PAHs): (GC/MS)	[]625	[ ]8270			
Acid Extractables (Phenols): (GC/MS)	[]625	[ ]8270		!!	
Pesticides: (GC)	[]608	[ ]8080			
Polychlorinated biphenyls (PCBs): (GC)	[]608	[ ]8080		!!	
Chlordane: (GC)	[ ]608	[ ]8080			
Toxaphene: (GC)	[]608	[ ]8080			<u> </u>
Others:					
Volatile Preserved with LHCL [ ]Sodium Thiosulfate		. Bioassay Sam	ple Submitted:[]	Yes [ ]No	
Comments: SAMARE SDGW006 * I Vial with 1g. air bulle KLH ID: SDGW006					

DES QA approval included on computer printout

Sample: Method: 624 **08932 SOUTH DAYTON DUMP** Date Collected: Collected by: PSARA. 02/23/96 Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Dilution: Matrix: Water 1 File No: V22709.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	0.6	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chioromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dipromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ИD	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ЙN	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0,5

Sample:	<b>08932 SOUTH DAYTON DUMP</b>	Method:	624	
Date Collected:	02/23/96	Collected by:	PSARA	
Data Analyzed:	· 02/27/96	Analyzed by:	A.JAMA'L	•
Matrix:	Water	Dilution:	1	
File No:	V22709.D	Conc. Units:	ug/L	

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropyibenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND .	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphtha!ene	ND	0.5
103-65-1	N-Propy:benzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-T≘trachloroethane	. ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0:5
127-18-4	Tetrachicroethene	ND	0.5
108-88-3	Toluene	1. <u>5</u>	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichlorcethene	2.0	0.5
75-69-4	Trichlorc:!uoromethane	ND .	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	0.7	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:

## Ohio EPA

## Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08932 SOUTH DAYTON DUMP** 

Number TICs found:

0

Concentration units:

ug/L

CAS NO.

COMPOUND

R. TIME

**EST. CONC** 

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY O.A.

MAR 01 1995

Date Received 96 B2 126 Lab Number 08933					•
Station/Location South Dayton	Dunia	2 SOGW	กัดว		
Sample Collected By	$\sim$ $\tau$	Affiliation _		PA, DCP.1	<i>-</i>
Bill to	٠ - ب ٠	Report Ana	alysis to9+	puo Morti	ri .
Division: [ ]DSW [ ]DDAGW [ ]DERR [ ]DHWM [ ]DAPC [ ]DSIWMOther District: [ ]CDO [ ]NWDO [ ]SEDO [ ]8WDO					
Sample Type: [ ]Aqueous [ ]Sediment [ ]Tis			[ ]Air Filter	[ ]Grab [ ]Co	mposite
W MM DD. H		Other YY MM D	D 100 144		
Date & Time of Sample Begin 76 1021 23	_	_			
Sample Use: []Rush []Litigation [9Comp	olaint []	Compliance [ ]S	urvey [ ]Amb	pient [ ]Other	
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate				
Sample Volume Submitted: # of Vials	#	of Liter Jars	· · · ·	Other	
Analysis Requested	1	Method	Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	X/624 (	[]8260 []524.2	96102127	<u>96183101</u>	A
Volatile Organic Compounds (VOC): (GC)	[]601&6	502 [ ]502.2			·
Base-Neutral & Acid Extractables: (GC/MS)	[ ]625	[ ]8270		!!	
Base-Neutral Extractables (PAHs): (GC/MS)	[ ]625	[ ]8270		!!	
Acid Extractables (Phenols): (GC/MS)	[]625	[ ]8270	!!		
Pesticides: (GC)	[ ]608	. []8080	!!	!!	
Polychlorinated biphenyls (PCBs): (GC)	[ ]608	0808[]		!!	
Chlordane: (GC)	[ ]608	. [ ]8080			
Toxaphene: (GC)	[ ]608	[]8080			<u></u>
Others:		·			
Volatile Preserved with LACL [ ]Sodium Thiosulfate		Bioassay Sam	ple Submitted:[]	Yes []No	
Comments: * Smyall air bullet in 5 DC-WOO7 - SAMPLE D 1 Vial.					

DES QA approval included on computer printout

Sample: **08933 SOUTH DAYTON DUMP** Method: 624 Date Collected: 02/23/96 Collected by: **PSARA** Data Analyzed: Analyzed by: 02/27/96 A.JAMAL Matrix: Dilution: Water 1 File No: V22710.D Conc. Units: ug/L

)

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	0.5	0.5
108-86-1	Bromobenzene	ND	0,5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0,5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87 <i>-</i> 3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene .	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	0.8	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	NĎ	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

Sample: **O8933 SOUTH DAYTON DUMP Method:** 624 Date Collected: 02/23/96 Collected by: **PSARA** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Water Dilution: File No: V22710.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropyibenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chioride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND .	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND ·	0.5
108-88-3	Toluene	1.5	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	2.2	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	0.7	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:

#### Ohio EPA

## Volatile Organic Analysis Data Report

**Tentatively Identified Compounds** 

Sample:

**08933 SOUTH DAYTON DUMP** 

Number TICs found:

0

Concentration units:

ug/L

420

CAS NO. COMPOUND R. TIME EST. CONC

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY O.A.

MAF 01 1996

Page 1

Date Received 96102127	N	Lab Nugb IAR U 5	99 <del>6</del>	089	42
Station/Location South Dayle Dump S Sample Collected By Ban Coler	DDG-WOO8	الحعسم	DISTRIC"		
Sample Collected By Han Cysler Affiliation Derr  Bill to Report Analysis to Steve Martin					
Division: [ ]DSW [ ]DDAGW DERR [ ]DHWM [ ]DAPC [ ]DSIWMOther District: [ ]CDO [ ]NEDO [ ]NWDO [ ]SEDO SWDO					
Sample Type: Aqueous [ ]Sediment [ ]Tis		ir Canister	[ ]Air Filter	[]Grab []Co	mposite
YY MM DD H Date & Time of Sample Begin 96 102 126			D HH MM		
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	olaint Complia	ence []S	urvey []Aml	pient [ ]Other	·.
Well Use: [ ]Industrial [ ]Public [ ]Priva					
Sample Volume Submitted: # of Vials	# of Liter .	lsis	<del></del>	Other	•
Analysis Requested	Method		Analyzed	Reported	Analyst
Volatile Organic Compounds (VOC): (GC/MS)	624 []8260	[ ]524.2	96.162127	96,1301	址
Volatile Organic Compounds (VOC): (GC)	[]601&602	[]502.2			
Base-Neutral & Acid Extractables: (GC/MS)	[ ]625	[]8270	!!:	!!	
Base-Neutral Extractables (PAHs): (GC/MS)	[ ]625	[]8270		<u> </u>	
Acid Extractables (Phenols): (GC/MS)	[]625	[ ]8270	!!		
Pesticides: (GC)	[]608	[]8080			
Polychlorinated biphenyls (PCBs): (GC)	[ ]e08	[ ]8080	!!	!!	
Chlordane: (GC)	[ ]608	[ ]8080			
Toxaphene: (GC)	[ ]608	[ ]8080		!!	
Others:				!!	
Volatile Preserved with HCL [ ]Sodium Thiosulfate Bioassay Sample Submitted: [ ]Yes [ ]No					
Comments: Both Vuals					

DES QA approval included on computer printout

Sample: **08942 SOUTH DAYTON DUMP** Method: 624 Date Collected: 02/26/96 Collected by: CISLER Data Analyzed: Analyzed by: 02/27/96 A.JAMAL Dilution: Matrix: Water 1

File No: V22712.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	0.7	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0,5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chiorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	0.6	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

Sample: **08942 SOUTH DAYTON DUMP** Method: 624 Date Collected: 02/26/96 Collected by: CISLER Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Water Dilution: Matrix: V22712.D Conc. Units: File No: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachioroethene	ND	0.5
108-88-3	Toluene	2.1	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	. 0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	0.9	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments: Data will be used as a screening, due to a large amount of head space & air bubbles.

### Ohio EPA

#### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08942 SOUTH DAYTON DUMP** 

Number TICs found:

1

Concentration units:

ug/L

CAS NO.	COMPOUND	R. TIME	EST. CONC	
000106-97-8	Butane	2.04	5.65	

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

As papered an Q.A

MAR 01 1995

BY Allebanil

Date Received 96 102/27	Lab N WAR 0 5 19 <b>96</b>	lumberO	8941	<u> </u>			
Station/Location South Dayton Dump	SDDGWW9						
Sample Collected By Psam/Cislor	DISTRICTION	tion Derr	•				
Bill to DERR	Repo	rt Analysis to 57	eve Mart.	<u></u>			
Division: [ ]DSW [ ]DDAGW DERR [ ]DHWM [ ]DAPC [ ]DSIWMOther District: [ ]CDO [ ]NEDO [ ]NWDO [ ]SEDO DESWDO							
Sample Type: Aqueous [ ]Sediment [ ]Tis	ssue [ ]Oil [ ]Air Cai	nister [ ]Air Filter	[]Grab []Coi	nposite			
Other  YY MM DD HH MM  YY MM DD HH MM  Date & Time of Sample Eegin 96102126 10130 End 1 1 1 1							
Sample Use: [ ]Rush [ ]Litigation	plaint Compliance	[]Survey []Amb	pient [ ]Other	42.43			
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate M						
Sample Volume Submitted: 2 # of Vials	# of Liter Jars		Other	•			
Analysis Requested	Method	Analyzed	Reported	Analyst			
Volatile Organic Compounds (VOC): (GC/MS)	624 []8260 []5	24.2 96162127	96,103,101	如			
Volatile Organic Compounds (VOC): (GC)	[]601&602 []5	02.2	<u> </u>				
Base-Neutral & Acid Extractables: (GC/MS)	[ ]625 [ ]83	270	!				
Base-Neutral Extractables (PAHs): (GC/MS)	[ ]625 [ ]83	270					
Acid Extractables (Phenols): (GC/MS)	[]625 []83	270					
Pesticides: (GC)	[]608 []80	080	!!	· .			
Polychlorinated biphenyls (PCBs): (GC)	[]608 []80	080					
Chlordane: (GC)	[]608 []80	080					
Toxaphene: (GC)	[]608 []80	080		<u></u>			
Others:	<u></u>		/				
Volatile Preserved with HCL [ ]Sodium Thiosulfate	Bioass	ay Sample Submitted: [ ]	Yes [ ]No				
Volatile Preserved with HCL [ ]Sodium Thiosulfate  Comments:  Head Space an Both  anly per U.B.	Viab - U	1st ao a S	Screenin	9			

	Ohio E	PA	
1 272	Volatile Organic Analy	sis Data Repor	t
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			
Sample:	<b>08941 SOUTH DAYTON DUMP</b>	Method:	624
Date Collected:	02/26/96	Collected by:	CISLER
Data Analyzed:	02/27/96	Analyzed by:	A.JAMAL
Matrix:	Water	Dilution:	1
File No:	V22711.D	Conc. Units:	ug/L
	_		
CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	1.6	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5.
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	· ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0,5
100-41-4	Ethylbenzene	0.7	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

60

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Sample: **08941 SOUTH DAYTON DUMP** Method: 624 **Date Collected:** 02/26/96 Collected by: **CISLER** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Water Dilution: 1 File No: V22711.D Conc. Units: ug/L

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	ND	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	2.9	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	2.4	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	0.5	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	0.7	0.5
108-38-3	Total m&p-xylenes	0.9	0.5
	·		

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments: Data will be used as a screening only, due to large amount of head space & air bubbles.

#### Ohio EPA

#### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08941 SOUTH DAYTON DUMP** 

Number TICs found:

2

Concentration units:

ug/L

	R. TIME EST. C	COMPOUND	CAS NO.
0.900115-11-7 1-Propene, 2-methyl- 2.03 0.9	2.01 4.76	1-Butene	00106-98-9
·	/l- 2.03 0.93	1-Propene, 2-methyl-	00115-11-7
	rl- 2.03 0.93	1-Propene, 2-methyl-	15-11-7
	•		

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

MAR 01 1996

BY Me Daniel

# APPENDIX F Quality Control Sample Analytical Reports

ORGANIC SAMPLE SUBMISSION / RE	ORGANIC SAMPLE SUBMISSION / REPORT FORM						
Date Received 96 102/21	Lab Num	<del>Je</del> r	2892=	<u> </u>			
Station/Location Scoth Dayton Rume - SORIOO - B  Sample Collected By PSARA I Make Justices, Affiliation PSARA is LOG Contractor  Bill to DERR Report Analysis to Rick Cisker   DERR							
Division: [ ]DSW [ ]DDAGW [ ADERR [ ]DHWM [ ]DAPC [ ]DSIWMOther District: [ ]CDO [ ]NEDO [ ]NWDO [ ]SEDO [ ]SWDO							
Sample Type: [,/Aqueous [ ]Sediment [ ]Tissue [ ]Oil [ ]Air Canister [ ]Air Filter  X ]Grab [ ]Composite Other							
YY MM DD H Date & Time of Sample Begin 96 102 1 20 /		DD HH MM					
Sample Use: []Rush []Litigation []Comp	plaint [ ]Compliance [ ]	Survey [ ]Ami	pient [ ]Other				
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate <i>NA</i>						
Sample Volume Submitted: 2 # of Vials# of Liter JarsOther							
Analysis Requested	Method	Analyzed	Reported	Analyst			
Volatile Organic Compounds (VOC): (GC/MS)	[]624 []8260 []524.2	96102122	961021,26	A			
Volatile Organic Compounds (VOC): (GC)	[ j601&602 [ ]502.2	<u> </u>	<u></u>				
Base-Neutral & Acid Extractables: (GC/MS)	[]625 -[]8270						
Base-Neutral Extractables (PAHs): (GC/MS)	[]625 []8270						
Acid Extractables (Phenols): (GC/MS)	[]625 []8270	<u> </u>					
Pesticides: (GC)	[]608 []8080						
Polychlorinated biphenyls (PCBs): (GC)	[]608 []8080						
Chlordane: (GC)	[ ]608 [ ]8080		- <u>-</u> <u>-</u>				
Toxaphene: (GC)	[]608 []8080						
Others:	<u> </u>			<u> </u>			
Volatile Preserved with MHCL [ ]Sodium Thiosulfate	Bioassay S	ample Submitted: [	IYes KNo	·			
Comments:			•				
			•				

DES QA approval included on computer printout

1				
Sample:	08922 SOUTH DAYTON DUMP	Method:	624	
Date Collected:	02/20/96	Collected by:	PASARA	
Data Analyzed:	02/22/96	Analyzed by:	A.JAMAL	
Matrix:	Water	Dilution:	1	
File No:	V22207.D	Conc. Units:	ug/L	

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0.5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
1.04-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chiorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	ND	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	. 0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5

Sample: **08922 SOUTH DAYTON DUMP** Method: 624 **Date Collected:** 02/20/96 Collected by: **PASARA** Data Analyzed: 02/22/96 Analyzed by: **AJAMAL** Matrix: Water **Dilution:** 1 File No: V22207.D Conc. Units: ug/L

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CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltcluene	ND	0.5
75-09-2	Methylene chloride	0.6	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylberzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	ЙD	0.5
87-61-6	1,2,3-Trichlcrobenzene	ЙD	0.5
120-82-1	1,2,4-Trichlcrobenzene	ND	0.5
71-55-6	1,1,1-Trichlcroethane	ND	0.5
79-00-5	1,1,2-Trichlcroethane	ND .	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichloroflucromethane	ND	0.5
96-18-4	1,2,3-Trichlcropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND ·	0.5
75-01-4	Vinyl chloride	ND	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

#### Explanation of terms:

CAS NO: Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

#### Comments:

### Ohio EPA

## Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08922 SOUTH DAYTON DUMP** 

Number TICs found:

2

Concentration units: u

ug/L

CAS NO.	COMPOUND	R. TIME	EST. CONC
000067-64-1	Acetone	3.71	1.57
001066-40-6	Silanol, trimethyl-	6.64	1.98
•			
		• .	
•			

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

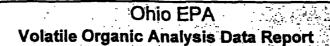
FER 2 3 1895

Date Received 96 102123	Lab Number	erC	18927			
Station/Location South Des ION Dugies			2021			
Sample Collected By Puch STUCK/FSACH, B.M.	ARMITICEN Affiliation	348it-15 L	DE CONTRA	wir_		
Bill to	Report Ana	lysis to Pick	-45652 0	524/20RE		
Division: [ ]DSW [ ]DDAGW [ ]DERF District: [ ]CDO [ ]NEDO [ ]NWDO		JDSIWM	Othe	r		
Sample Type: [MAqueous [ ]Sediment [ ]Tis	ssue [ ]Oil [ ]Air Canister	[ ]Air Filter	[]Grab []Co	mposite		
YY MM DD HH MM  Date & Time of Sample Begin 96   2   2   16   30 End 96   2   2   16   30						
Sample Use: [ ]Rush [ ]Litigation [ ]Comp	plaint [V]Compliance [V]S	Survey [ ]Amb	pient [ ]Other			
Well Use: [ ]Industrial [ ]Public [ ]Priva	ate NA		I	•		
Sample Volume Submitted: 2 # of Vials	# of Liter Jars		Other	•		
Analysis Requested	Method	Analyzed	Reported	Analyst		
Volatile Organic Compounds (VOC): (GC/MS)	M624 []8260 []524.2	76107127	96103101	A		
Volatile Organic Compounds (VOC): (GC)	[]601&602 []502.2	i	· <u>/</u> _/			
Base-Neutral & Acid Extractables: (GC/MS)	[]625 []6270	!!				
Base-Neutral Extractables (PAHs): (GC/MS)	[]625 []8270					
Acid Extractables (Phenols): (GC/MS)	[]625 []8270	!!		-		
Pesticides: (GC)	[]608 []8080	<u> </u>	!!			
Polychlorinated biphenyls (FCBs): (GC)	[]608 []8080			<del></del>		
Chlordane: (GC)	[]608 []8080	'	! <u></u> !			
Тохарhеле: (GC)	[]608 []8080					
Others:				<u> </u>		
Volatile Preserved with MHCL [ )Sodium Thiosulfate	Bioassay San	nale Submitted: [ ]	Yes MNo			

Comments: צומאסלה השווים

			· · · · · · · · · · · · · · · · · · ·
Sample:	O8927 SOUTH DAYTON DUMP	Method:	624
Date Collected:	02/21/96	Collected by:	PSARA
Data Analyzed:	02/27/96	Analyzed by:	A.JAMAL
Matrix:	Water	Dilution:	1
File No:	V22713.D	Conc. Units:	ug/L

CAS NO.	COMPOUND	CONC	DL
71-43-2	Benzene	ND	0.5
108-86-1	Bromobenzene	ND	0.5
74-97-5	Bromochloromethane	ND	0.5
75-27-4	Bromodichloromethane	ND	0,5
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	0.5
104-51-8	N-Butylbenzene	ND	0.5
135-98-8	Sec-Butylbenzene	ND	0.5
98-06-6	Tert-Butylbenzene	ND	0.5
56-23-5	Carbon tetrachloride	ND	0.5
108-90-7	Chlorobenzene	ND	0.5
75-00-3	Chloroethane	ND	0.5
67-66-3	Chloroform	ND	0.5
74-87-3	Chloromethane	ND ND	0.5
95-49-8	2-Chlorotoluene	ND	0.5
106-43-4	4-Chlorotoluene	ND	0.5
124-48-1	Dibromochloromethane	ND	0.5
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.5
106-93-4	1,2-Dibromoethane	ND	0.5
74-95-3	Dibromomethane	ND	0.5
95-50-1	1,2-Dichlorobenzene	ND	0.5
541-73-1	1,3-Dichlorobenzene	ND	0.5
106-46-7	1,4-Dichlorobenzene	ND	0.5
75-71-8	Dichlorodifluoromethane	ND	0.5
75-34-3	1,1-Dichloroethane	ND	0.5
107-06-2	1,2-Dichloroethane	0.9	0.5
75-35-4	1,1-Dichloroethene	ND	0.5
156-59-4	Cis-1,2-dichloroethene	ND	0.5
156-60-5	Trans-1,2-dichloroethene	ND	0.5
78-87-5	1,2-Dichloropropane	ND	0.5
142-28-9	1,3-Dichloropropane	ND	0.5
594-20-7	2,2-Dichloropropane	ND	0.5
563-58-6	1,1-Dichloropropene	ND	0.5
10061-1-5	Cis-1,3-dichloropropene	ND	0.5
10061-02-6	Trans-1,3-dichloropropene	ND	0.5
100-41-4	Ethylbenzene	ND	0.5
87-68-3	Hexachlorobutadiene	ND	0.5



Sample: **08927 SOUTH DAYTON DUMP** Method: 624 Date Collected: 02/21/96 Collected by: **PSARA** Data Analyzed: 02/27/96 Analyzed by: A.JAMAL Matrix: Water Dilution: 1 File No: V22713.D Conc. Units: ug/L

1

CAS NO.	COMPOUND	CONC	DL
98-82-8	Isopropylbenzene	ND	0.5
99-87-6	4-Isopropyltoluene	ND	0.5
75-09-2	Methylene chloride	0.7	0.5
91-20-3	Naphthalene	ND	0.5
103-65-1	N-Propylbenzene	ND	0.5
100-42-5	Styrene	ND	0.5
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.5
127-18-4	Tetrachloroethene	ND	0.5
108-88-3	Toluene	ND	0.5
87-61-6	1,2,3-Trichlorobenzene	ND	0.5
120-82-1	1,2,4-Trichlorobenzene	ND	0.5
71-55-6	1,1,1-Trichloroethane	ND	0.5
79-00-5	1,1,2-Trichloroethane	ND	0.5
79-01-6	Trichloroethene	ND	0.5
75-69-4	Trichlorofluoromethane	ND	0.5
96-18-4	1,2,3-Trichloropropane	ND	0.5
95-63-6	1,2,4-Trimethylbenzene	ND	0.5
108-67-8	1,3,5-Trimethylbenzene	ND	0.5
75-01-4	Vinyl chloride	ND .	0.5
95-47-6	O-xylene	ND	0.5
108-38-3	Total m&p-xylenes	ND	0.5

#### Explanation of terms:

CAS NO : Chemical Abstracts Service Number.

ND : Compound not detected OR less than DL

DL : Detection Limit taking into account MDL and sample dilution considering actual

volume of sample analyzed.

Comments:

### Ohio EPA

#### Volatile Organic Analysis Data Report Tentatively Identified Compounds

Sample:

**08927 SOUTH DAYTON DUMP** 

Number TICs found:

1

خوش

Concentration units:

ug/L

200

 CAS NO.
 COMPOUND
 R. TIME
 EST. CONC

 000067-64-1
 Acetone
 3.72
 1.99

Notes:

Tentatively Identified Compounds are listed for the 10 most prominant compounds. Additional compounds may be present if all 10 are listed. Names listed represent the best fit as determined by library identification by computer. The name listed is not necessarily the name of the actual compound. Where less than 10 compounds are listed, no additional compounds were found.

APPROVED BY Q.A

MAR 61 1996

# APPENDIX B: SITE PHOTOGRAPHIC LOG

## Sample Collection Photographic Log Index

for the

## South Dayton Dump and Landfill

Ohio Master Sites List #557-0752 Montgomery County Dayton, Ohio

Compiled by:

The Ohio Environmental Protection Agency Division of Emergency and Remedial Response 401 East Fifth Street Dayton, Ohio 45402

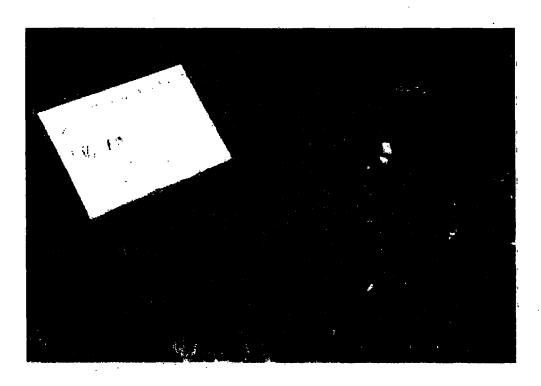


Photograph #96-DV-03-S01

Date: July 9, 1996

**Direction: N/A** 

Description: Soil sample collected 4 - 4.5 feet below ground surface (bgs) north of center portion of landfill near drum area. Sample collected five (5) yards south of the east-west access road that runs along the northern portion of the site.

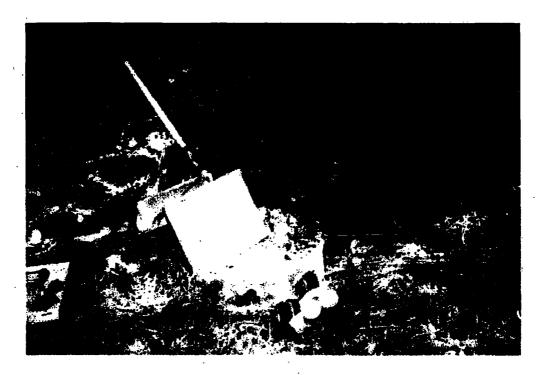


Photograph #96-DV-03-S02

Date: July 9, 1996

**Direction: N/A** 

Description: Soil sample collected from 0 - 1 inches bgs along the north-south access road located in center of the landfill.



Sample #96-DV-03-S03 and #96-DV-03-D03

Date: July 9, 1996 Direction: N/A

Description: Soil sample collected from 1.5 - 2 feet bgs near concrete rubble piles at the northwest edge of the depression area located in the center of the landfill.



Sample #96-DV-03-S04

Date: July 9, 1996

**Direction: N/A** 

Description: Soil sample collected from 1.5 - 2 feet bgs immediately east of the mideastern edge of the depression area located in the center of the landfill.



Date: July 9, 1996

**Direction: N/A** 

Description: Soil sample collected from 5 feet bgs along western edge of the landfill between the access road and the steep slope to the flood plain.

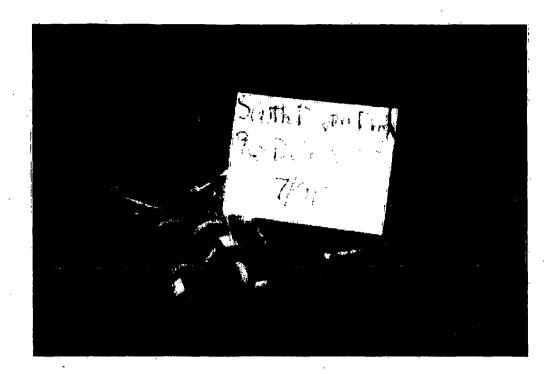


Sample #96-DV-03-S06

Date: July 9, 1996

**Direction: Northeast** 

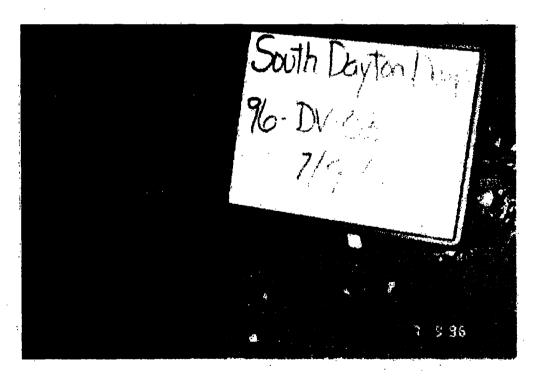
Description: Soil sample collected from 1.5 - 2.3 feet bgs near the mid-southeastern portion of landfill between existing concrete rubble piles and the depression area.



Date: July 9, 1996

**Direction: N/A** 

Description: Surface soil sample collected from 2 -3 inches bgs along the midwestern edge of the landfill on the slope adjacent to the bike trail and Great Miami River between MW-102 and MW-103. Sample collected adjacent to a exposed drum containing hard, green, waste material.



Sample #96-DV-03-S09

Date: July 9, 1996

Direction: N/A

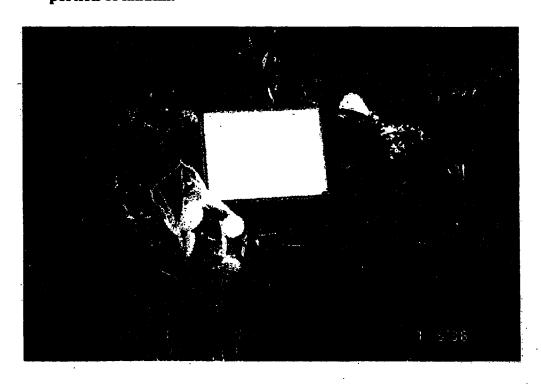
Description: Soil sample collected 2 - 6 inches bgs along the slope at the northwest corner of the landfill. Sample collected adjacent to 4 exposed drums.



Date: July 9, 1996

**Direction: N/A** 

Description: Soil sample collected from 0 - 4 inches bgs along the slope south of the center of the eastern concrete pad located along the north access road in midwest portion of landfill.



Sample #96-DV-03-S11

Date: July 9, 1996

**Direction: N/A** 

Description: Soil sample collected from 3 - 4 inches bgs along the ravine located at the southeast corner of the landfill. Sample collected near the west end of the ravine.

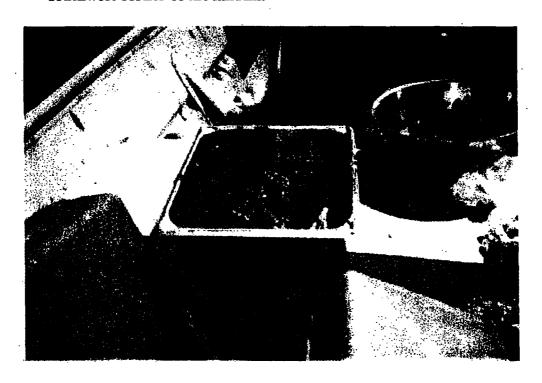


Date: July 9, 1996

Direction: N/A

Description: Sediment sample collected from 15 - 18 feet below water surface (bws).

Located between the two utility towers, 25 yards from the shoreline, directly below the overhead utility lines, in the impoundment located off the southwest corner of the landfill.



Sample #96-DV-03-S16

Date: July 9, 1996

Direction: N/A

Description: Sediment sample collected from 15 - 18 feet bws. Located 200 feet southeast of utility tower on gravel outcrop along the northeast shoreline, in the impoundment located off the southwest corner of the landfill.



Sample #96-DV-03-S17 and #96-DV-03-D17

Date: July 9, 1996

**Direction: North** 

Description: Sediment sample collected from 0 - 6 inches bgs. Located along the east bank of the Great Miami River, due west of monitoring well #103.

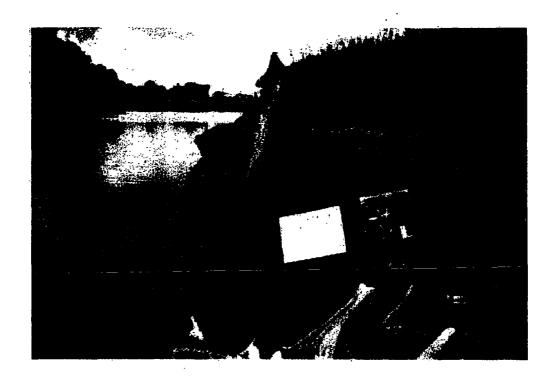


Sample #96-DV-03-S18

Date: July 9, 1996

**Direction: North** 

Description: Sediment sample collected from 0 - 6 inches bgs. Located along the east bank of the Great Miami River, approximately 75 yards downstream of the landfill.



Sample #96-DV-03-S19

Date: July 9, 1996

**Direction: North** 

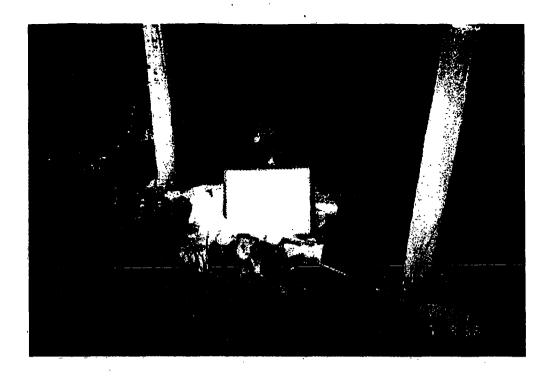
Description: Background sediment sample collected from 0 - 6 inches bgs. Located upstream of the site, between the landfill and the asphalt plant, along the east bank of the Great Miami River.



Sample #96-DV-03-S23 and #96-DV-03-D23

Date: July 9, 1996 Direction: N/A

Description: Ground-water sample from monitoring well #101. Well screen interval from 23.5 - 33.5 feet bgs. Located near southeast corner of site near adjacent to the neighboring pallet company property.



**Sample #96-DV-03-S24** 

Date: July 9, 1996

Direction: N/A

Description: Ground-water sample from monitoring well #103. Well screen interval from 22 - 32 feet bgs. Located in the middle of the landfill's western end, adjacent to the bike path running along the Great Miami River.



Sample #96-DV-03-S25

Date: July 9, 1996

**Direction: N/A** 

Description: Ground-water sample from monitoring well #102. Well screen interval from 20 - 30 feet bgs. Located near the southwest corner of the landfill, adjacent to the bike path running along the Great Miami River. Located approximately 450 feet south of monitoring well #102.

# APPENDIX C: COMPREHENSIVE ANALYTICAL RESULTS

#### Comprehensive Analy al Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$01	96-DV-03- \$02	96-DV-03- \$03	96-DV-03- D03	96-DV-03- 804	96-DV-03- S05	96-DV-03- \$06	96-DV-03- \$07	96-DV-03- S08	96-DV-03- \$09
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96
TIME SAMPLE COLLECTED	10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH	4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)				Field Duplicate				Beckground		

				<u>_</u>					····		
COMPOUND DETECTED (ug/kg)	<del></del>										***********************
VOLATILE ORGANIC COMPOUNDS	CROL										
chloromethane	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	įIU	110
bromomethane	10 μg/kg	1 <u>2</u> U	<u>1</u> 0U	12U	12U	16U	12U	16U	ΙĮŪ	<u>1</u> 1U	110
vinyl chloride	10 μg/kg	12U	10Ü	12U	12U	16U	12U	16U	110	110	11U
chloroethane	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	11 <b>U</b>	110
methylene chloride	10 μg/kg	12JBU	16BU	12JBU	12JBU	16JBU	12JBU	16JBU	11JBU	16	11JBU
acetone	10 μ <b>g/kg</b>	12U	10U	12U	3J	16U	12U	16U	110	110	110
carbon disulfide	10 μg/kg	12U	10U	12U	1 <b>2</b> U	16U	12U	16U	11U	11Ü	ĬĺŲ
1,1-dichloroethene	10 μg/kg	12U	10U	12Ų	12U	16U	12U	16U	IIU	110	IIU
1,1-dichloroethane	10 μg/kg	12U	10Ų	12U	12U	16Ü	12U	16U	liU	HÜ	110
1,2-dichlorothene (total)	10 μg/kg	12 <u>U</u>	10U	12Ü	12U	16U	12U	16U	110	110	110
chloroform	10 μg/kg	12 <u>U</u>	10U	12U	12U	16U	12U	16U	ווט	110	110
1,2-dichloroethane	10 µg/kg	12U	10U	12U	12U	16U	12U	16U	11U	110	110
2-butanone	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	HU	110
1,1,1-trichloroethane	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	11U	ĨĬŬ
carbon tetrachloride	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	ווע	110	ΪΙÜ
bromodichloromethane	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	110	110
1,2-dichloropropane	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	11U	IIU
cis-1,3-dichloropropene	10 μ <b>g/kg</b>	12U	10U	12U	12U	16U	12U	16U	110	110	110
trichloroethene	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	110	110
dibromochloromethane	10 μg/kg	12U	10U	12U	12U	160	12Ú	16U	110	110	ווט
1,1,2-trichloroethane	10 μ <b>g/kg</b>	12U	10U	12Ū	12U	16U	12U	16U	110	IIU	ijŲ
benzene	10 μ <b>g/kg</b>	12U	10 <b>U</b>	12U	12U	16U	12U	16U	110	ĪĮŪ	ווע
trans-1,3-dichloropropene	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	110	110	110
bromoform	10 μ <b>g/kg</b>	12U	10U	12U	12U	16U	12Ú	16U	110	110	11U
4-methyl-2-pentanone	10 μg/kg	12Ú_	10U	12U	12U	16U	I2U	16U	110	110	110
2-hexanone	10 μg/kg	12U	10U	12U	12U	16U	12U	16U	11U	HU	11U
tetrachloroethene	10 μg/kg	59	10U	12U	12Ū	16Ü	12Ü	16U	HU	110	IIU
1,1,2,2-tetrachloroethane	10 μg/kg	12U_	10U	12U	12U	16U	12U	16U	110	IIU"	โเบ
toluene	10 μg/kg	12U	10U	.73	5J	16U	12U	16Ú	110	10J	110
chlorobenzene	l0 μg/kg	12U	10U	I2U	12U	16U	12U	1 <u>6</u> U	110	ĪIJ	110

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### Comprehensive Analyal Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$10	96-DV-03- \$11	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	17:20	17:00	
SAMPLE DEPTH	0-4"	3-4"	
QA/QC DESCRIPTION (if applicable)			

			<u>:</u>
COMPOUND DETECTED (µg/kg)	T I		
volatile organic compounds	CROL	1211	1177
bromomethane	10 μg/kg	12U	11U
	10 μg/kg	12U	11U
vinyl chloride	10 μ <b>g/kg</b>	12U	110
chloroethane	10 μg/kg	12U	110
methylene chloride	10 μg/kg	12JBU	17BU
acetone	10 μg/kg	12U	HÚ
carbon disulfide	10 μg/kg	12U	110
1,1-dichloroethene	10 μg/kg	12U	110
1,1-dichloroethane	10 μg/kg	12U	HU
1,2-dichlorothene (total)	l0 μg/kg	12U	11U
chloroform	10 μg/kg	12U	11U
1,2-dichloroethane	10 μg/kg	12U	11U
2-butanone	10 μg/kg	12U	110
1,1,1-trichloroethane	10 μg/kg	12Ù	110
carbon tetrachloride	10 μg/kg	12U	110
bromodichloromethane	10 µg/kg	12U	110
1,2-dichloropropane	10 μg/kg	12U	11U
cis-1,3-dichloropropene	10 μg/kg	12Ü	ilU
trichloroethene	10 μg/kg	11J	110
dibromochloromethane	10 μg/kg	12U	110
1,1,2-trichloroethane	10 μg/kg	12U	IIU
benzene	10 μg/kg	12U	11Ū
trans-1,3-dichloropropene	10 μg/kg	12U	110
bromoform		12U	110
4-methyl-2-pentanone	10 на/ка	12U	110
	10 μg/kg		
2-hexanone	10 μg/kg	120	110
tetrachloroethene	10 μg/kg	I2U	ווֹטָ
1,1,2,2-tetrachloroethane	1 <u>0</u> μg/kg	12U	110
toluene	10 μg/kg	<b>4</b> J	7J

#### Comprehensive Analy Results - Soil Samples

SAMPLE NUMBERS		96-DV-03- \$01	96-DV-03- \$02	96-DV-03- \$03	96-DV-03- D03	96-DV-03- 804	96-DV-03- S05	96-DV-03- \$06	96-DV-03- \$07	96-DV-03- S08_	96-DV-03-
DATE SAMPLE COLLECTED	ž	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96
TIME SAMPLE COLLECTED		10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH		4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"_	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)				I	Field Duolicate				Backeround		
ethyl benzene	10 μg/kg	12U	10U	12U	12U	16U	12Ų	16U	110	11U	1 FU
styrene	10 μg/kg	12U	10Ú	Í2U	12U	16U	12U	16U	11.0	110	110
xylene (Total)	10 μ <b>g/kg</b>	12U	1 <b>0</b> U	1 <b>2</b> U	12U	16U	12U	16U	11Ų	110	110
											-
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL										
phenol	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370Ü	64 J
bis(2-chloroethyl)ether	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
2-chlorophenol	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
1,3-dichlorobenzene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
1,4-dichlorobenzene	330 μg/kg	140J	340U	410U	410U	520U	380U	530U	3 <u>80</u> U	370U	350U
1,2-dichlorobenzene	330 μg/kg	410U	340U	410U	410U	520U	380Ü	530 <u>U</u>	380U	370U	350U
2-methylphenol	330 μg/kg	410U	340U	410U	410U	520U	380U	530Ų	380Ü	370U	350U
4-methylphenol	330 μg/kg	410U	340U	410Ü	410U	520Ū	38 <u>0</u> U	530U	380U	370U	350U
n-nitroso-di-n-dipropylamine	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
hexachloroethane	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	37 <u>0</u> Ų	350U
nitrobenzene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
isophorone	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
2-nitrophenol	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
2,4-dimethylphenol	330 μg/kg	410U	340U	410U	410U	520U	380Ü	530U	380U	370U	350U
bis(2-chloroethoxy)methane	330 μg/kg	410U	340U	410U	410U	520U	380U	530Ū	380U	370U	350U
2,4-dichlorophenol	330 μg/kg	410U	340U	410U	410U	520U	380Ų	53 <u>0</u> U	380U	370U	350U
1,2,4-trichlorobenzene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U

330 μg/kg

330 μg/kg

330 µg/kg

330 µg/kg

330 μg/kg

naphthalene

4-chloroaniline

hexachlorobutadiene

2-methylnaphthalene

4-chloro-3-methylphenol

1 .

410U

410U

410U

410U

410U

20J

340Ü

340U

340U

340U

410U

410U

410U

410Ü

410U

410U

410U

410U

410U

410U

58J

520U

520U

520U

77J

380U

380U

380U

380U

380U

530U

530U

530U

530U

530U

380U

380U

380U

380U

380U

250J

370U

370U

370U

390

35J

350U

350Ü

350U

49J

#### Comprehensive Analy al Results - Soil Samples

	<del></del>	<del></del>	<u> </u>
SAMPLE NUMBERS		96-DV-03-	96-DV-03-
DATE SAMPLE COLLECTED		\$10 7/09/96	7/09/96
TIME SAMPLE COLLECTED	··· ·· · · · · · · · · · · · · · · · ·	17:20	17:00
SAMPLE DEPTH		0-4"	3-4"
QA/QC DESCRIPTION (if applicable)	<del></del>	0-4	3-4
QAQC DESCRIT FION (II applicable)			<u> </u>
chlorobenzene	10 μg/kg	12Ü	110
ethyl benzene	10 μg/kg	12U	11U
styrene	10 μg/kg	12U	11U
xylene (Total)	10 μg/kg	12U	110
		:	
SEMĪ-VOLATĪLĒ ORGANIC COMPOUNDS	CRQL		
phenol	330 μg/kg	400U	360U
bis(2-chloroethyl)ether	330 μg/kg	400U	360U
2-chlorophenol	330 μg/kg	400U	360U
1,3-dichlorobenzene	330 μg/kg	400U	360U
1,4-dichlorobenzene	330 μg/kg	400U	360U
1,2-dichlorobenzene	330 µg/kg	400U	360U
2-methylphenol	330 μg/kg	400U	360U
4-methylphenol	330 μg/kg	400U	360U
n-nitroso-di-n-dipropylamine	330 μg/kg	400Ü	360U
hexachloroethane	330 μg/kg	400U	360U
	330 μg/kg	400U	360U
isophorone	330 μg/kg	400U	360U
2-nitrophenol	330 μg/kg	400U	360U
2,4-dimethylphenol	330 μg/kg	400U	360U
bis(2-chloroethoxy)methane	330 μg/kg	400U	360U
2,4-dichlorophenol	330 μg/kg	400U	360U
	330 μg/kg	400U	360U
	330 μg/kg	26J	59J
	330 μg/kg	400U	360U
	330 μg/kg	400U	360U
	330 μg/kg	400U	360U
	330 μg/kg	46J	74J

#### Comprehensive Analyail Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$01	96-DV-03- S02	96-DV-03- \$03	96-DV-03- D03	96-DV-03- 804	96-DV-03- 805	96-DV-03- \$06	96-DV-03- \$07	96-DV-03- S08	96-DV-03- \$09
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96
TIME SAMPLE COLLECTED	10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH	4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)				Field Damlicate				Reckeround		

COMPOUND DETECTED (µg/kg)											
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL										
hexachlorocyclopentadiene	330 μg/kg	410U	340U	410U	410U	520U	380U	53ÖU	380U	370U	350U
2,4,6-trichlorophenol	330 μg/kg	410U	340U	410U	410Ŭ	52QU	380U	530Ü	380U	370U	350U
2,4,5-trichlorophenol	800 μg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
2-chloronaphthalene	330 μg/kg	410U	340U_	410U	410U	520U	380U	530U	380U	370U	350U
2-nitroaniline	800 μg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
dimethylphthalate	330 μg/kg	410U	<b>340</b> Ù	410U	410U	520U	3 <b>8</b> 0U	530U	38 <u>0</u> Ú	370U	350U
acenaphthylene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
2,6-dinitrotoluene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380Ŭ	370U	350U
3-nitroaniline	330 μg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
acenaphthene	330 μg/kg	410U	340U	410U	410U	33J	380U	530U	380U	91J	350U
2,4-dinitrophenol	800 µg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
4-nitrophenol	.800 μg/kg	1000U	860U.	1000U	1000U	1300U	960U	1300U	940U	920U	880U
dibenzofuran	330 μg/kg	410U	340U_	410U	410Ŭ	28J	380U	530U	380U	160J	350Ū
2,4-dinitrotoluene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
diethylphthalate	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	370U	350U
4-chlorophenyl-phenyl ether	330 μg/kg	410U	340U	410Ŭ	410U	520U	3 <b>8</b> 0U	530U	380U	370U	350U
fluorene	330 μg/kg	410U	340U	410U	410U	520ปั	380U	530U	380U	87J	350U
4-nitroaniline	800 μg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
4,6-dinitro-2-methylphenol	800 μg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
n-nitrosodiphenylamine	330 μg/kg	410U	340U	410U	410U	520U	380U	5 <u>30</u> Ū	380U	27J	350U
4-bromophenyl-phenyl ether	330 μg/kg	410U	340U	410U	410U	520U	3 <b>8</b> 0U	530U	380U	370U	350U
hexachlorobenzene	330 μg/kg	410U	340U	410U	410U	520U	380U	530Ü	380U	370U	350U
pentachlorophenol	800 μg/kg	1000U	860U	1000U	1000U	1300U	960U	1300U	940U	920U	880U
phenanthrene	330 μg/kg	410U	340U	33J	34J	170J	21J	530U	63J	1700	180J
	330 μg/kg	410U	340U	410U	410U	29J	380U	530U	380U	290J	26J
	330 μg/kg	410U	18J	410U	27J	28J	380U	31J.	28J	370U	1500
	330 μg/kg	410U	21J	410U	410Ú	140J	31J	530U	110J	2000	340J
pyrene	330 μg/kg	410U	20J	410U	410U	160J	30J	530U	130J	1900	320J

#### Comprehensive Analyaal Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$10	96-DV-03- \$11	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	
TIME SAMPLE CÖLLECTED	17:20	17:00	
SAMPLE DEPTH	0-4"	3-4"	
QA/QC DESCRIPTION (if applicable)			

COMPOUND DETECTED (µg/kg)			
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL		
hexachlorocyclopentadiene	330 μg/kg	400 <u>U</u>	360U
2,4,6-trichlorophenol	330 μg/kg	400Ų	360U
2,4,5-trichlorophenol	800 μg/kg	1000U	900U
2-chloronaphthalene	330 μg/kg	400U	360U
2-nitroaniline	800 µg/kg	1000U	900U
dimethylphthalate	330 μg/kg	400U	360U
acenaphthylene	330 μg/kg	400U	50J
2,6-dinitrotoluene	330 μg/kg	400U	360U
3-nitroaniline	330 μg/kg	1000U	900U
acenaphthene	330 μg/kg	400U	26)
2,4-dinitrophenol	800 μg/kg	10 <u>0</u> 0Ū	900U
4-nitrophenol	800 μg/kg	1000U	900U
dibenzofuran	330 μg/kg	400U	<b>2</b> 9J
2,4-dinitrotoluene	330 μg/kg	400U	360U
diethylphthalate	330 μg/kg	400U	360U
4-chlorophenyl-phenyl ether	330 μg/kg	400U	360U
fluorene	330 μg/kg	400U	38J
4-nitroaniline	800 μg/kg	1000U	900U
4,6-dinitro-2-methylphenol	800 μg/kg	1000U	900U
n-nitrosodiphenylamine	330 μg/kg	400U_	360U
4-bromophenyl-phenyl ether	330 μg/kg	400U	360Ü
hexachlorobenzene	33 <u>0</u> μg/kg	400U	360U
	800 μg/kg	1000U	900U
	330 µg/kg	100J	570
anthracene	330 μg/kg	400U	97J
di-n-butylphthalate	33Ö μg/kg	35J	360U
fluoranthene	330 μg/kg	100J	1300
ругеле	330 μg/kg	120Ĵ	1600

### Comprehensive Analyseal Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- S01	96-DV-03- \$02	96-DV-03- \$03	96-DV-03- D03	96-DV-03- 804	96-DV-03- \$05	96-DV-03- 806	96-DV-03- \$07	96-DV-03- \$08	96-DV-03- \$09
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96
TIME SAMPLE COLLECTED	10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH	4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)				Pield Duplicate				Background		

COMPOUND DETECTED (µg/kg)											
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL										
butylbenzylphthalate	330 μg/kg	410Ü	25J	410U	33J	520U	380U	530U	26J	370U	18000E
carbazole	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380J	280J	350U
benzo(a)anthracene	330 μg/kg	410U	340U	410U	410U	41J	380U	530U	58J	1100	180J
chrysene	330 μg/kg	410U	340U	21J	25J	56J	27J	530U	83J	1200	320J
bis(2-ethylhexyl)phthalate	330 μg/kg	24J	33J	410U	410U	540	380U	530Ü	32J	230J	2100
di-n-octylphthalate	330 μg/kg	410U	23J	410U	410U	520U	380U	530U	380U	19J	350U
benzo(b)fluoranthene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	1000	320J
benzo(k)fluoranthene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	950	200J
benzo(a)pyrene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	62J	820	110J
indeno(1,2,3-cd)pyrene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	48J	480	120J
dibenzo(a,h)anthracene	330 μg/kg	410Ü	340U	410U	410U	520U	380U	530U	380U	310J	350U
benzo(g,h,i)perylene	330 μg/kg	410U	340U	410U	410U	520U	380U	530U	380U	160J	350U

PESTICIDES/PCRs	CROL										
alpha-BHC	1.7 μg/kg	2.1U	1.8U	2.1U	2.1U	2.6U	2.00	2.7U	1.9U	0.71PJ	1.8U
beta-BHC	1.7 μg/kg	2.1U	1.8U	2.1U	2.1U	2.6U	2.0U	2.7U	1.9U	1.9U	1.8U
delta-BHC	1.7 μ <i>g/</i> kg	2.1U	1.8U	2.1U	2.1U	2.6U	2.0U	2.7U	1.9U	1.9U	1.8U
gamma-BHC (Lindane)	1.7 μg/kg	2.1U	1.8U	2.1U	2.1U	2.6U	2.0U	2.7U	1.9U	ĭ.8J	1.8U
heptachlor	1.7 μg/kg	2.1U	1.8U	2.IU	2.1U	2.6U	2.0U	2.7U	1.9U	1.9U	1.8U
aldrin	1.7 μg/kg	2.1U	์ 1.8บั	2.1U	2.1U	2.6U	2.0U	2.7U	1.9Ŭ	1.9Ü	1.8U
heptachlor epoxide	1.7 μg/kg	2.1U	1.8U	2.1Ü	0.49PJ	0.78PJ	2.0U	2.7U	1.9⊎	1.9U	1.8U
endosulfan l	1.7 μg/kg	2. <u>I</u> U	1.8U	2.1U	2.1U	2.6U	2.0U	2.7Ū	0.42PJ	1.9U	1.8U
dieldrin	3.3 μg/kg	4.1U	3.4U	4.1U	4.1U	5.2U	3.8U	5.3U	3.8U	3.7U	3.5U
4,4-DDE	3.3 μg/kg	4.1Ü	3.4Ų	4.1U	4. IU	2.6J	0.44PJ	5.3U	3.8U	2.4PJ	3.5U
e <u>ndrin</u>	3.3 μg/kg	1.4PJ	3,4U	2.3PJ	4.1U	5.2U	3.8U	5.3U	3.8U	3.7U	3.5Ü
endosulfan II	3.3 μg/kg	4.1U	3.4U	4.1U	4.1U	5.2U	3.8U	5.3U	1.43	5.4	3.5U
4,4-DDD	3.3 μg/kg	4.1U	3.4 <u>U</u>	4.1U	4.1U	5.2U	3.8U	5,3U	0.65J	3.7U	3.5U
endosulfan sulfate	3.3 μg/kg	4.1U	3.4U	4.1U	4.1U	5.2U	3.8U	5.3U	3.8U	3.7U	3.5Ū
4,4-DDT	3.3 μg/kg	0.60PJ	3.4U	4.1U	4.1U	5.2U	0.71PJ	5.3U	1.6PJ	8.8P	3.5U

#### Comprehensive Analysical Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$10	96-DV-03- \$11	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	17:20	17:00	
SAMPLE DEPTH	0-4"	3-4"	
QA/QC DESCRIPTION (if applicable)		•	

COMPOUND DETECTED (µg/kg)			
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL		
butylbenzylphthalate	330 μg/kg	61J	360U
carbazole	330 μg/kg	400U	38J
benzo(a)anthracene	330 μg/kg	51J	950
chrysene	330 μg/kg	93J	1000
bis(2-ethylhexyl)phthalate	330 μg/kg	72J	120J
di-n-octylphthalate	330 µg/kg	400U	360U
heñzo(b)fluoranthene	330 µg/kg	79J	1300
benzo(k)fluoranthene	330 μg/kg	73J	920
benzo(a)pyrene	330 μg/kg	400U	1000
indeno(1,2,3-cd)pyrene	330 μg/kg	400U	910
dibenzo(a,h)anthracene	330 μg/kg	400U	450
benzo(g,h,i)perylene	330 μg/kg	400U	310J

PESTICIDES/PCBs	CROL		
alpha-BHC	1.7 μg/kg	2.1U	1.8U
beta-BHC	1.7 μg/kg	<u>2</u> .1U	1. <b>8</b> U
delta-BHC	1.7 μg/kg	2.1U	1.8U
gamma-BIIC (Lindane)	1.7 μg/kg	0.77PJ	0.42J
heptachlor	1.7 μg/kg	21U	1.8U
aldrin	1.7 μg/kg	2.1U	1.8U
heptachlor epoxide	1.7 μg/kg	2.1U	1.8U
endosulfan I	1.7 μg/kg	2.1U	1.8U
dieldrin	3.3 μg/kg	4.0U	3.6U
4,4-DDE	3.3 μg/kg	4.0U	3.6U
endrin	3.3 μg/kg	4.0U	3.6U
endoșulfan II	3.3 μg/kg	4.0U	3.6U
4,4-DDD	3.3 μg/kg	4.0U	4.4
endosulfan sulfate	3.3 μg/kg	4.0U	3.6U
4,4-DDT	3:3 μg/kg	4.0U	3.6U

### Comprehensive Analymal Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- S01	96-DV-03- \$02	96-DV-03- \$03	96-DV-03- D03	96-DV-03- \$04	96-DV-03- \$05	96-DV-03- \$06	96-DV-03- \$07	96-DV-03- \$08	96-DV-03- \$09
DATE SAMPLE COLLECTED	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96
TIME SAMPLE COLLECTED	10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH	4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)		·		Field Durolicate				Background		

COMPOUND DETECTED (µg	/kg)			*							
PESTICIDES/PCBs	CROL										
methoxychlor	17 μg/kg	21Ü	18U	1.8PJ	21U	26U	0.94PJ	27U	19U	19U	18U
endrin ketone	3.3 μg/kg	4.1Ü	3.4U	4.1Ü	4.1U	5.2U	3.8U	~ 5.3U	3.8U	3.7Ü	3.5U
endrin aldehyde	3.3 μg/kg	2.2PJ	3.4U	6.6	6.6P	5.2U	4.0P	5.3U	6.4P	3.7U	3.5U
alpha-chlordane	1.7 μg/kg	2.1U	1.8U	2.1U	2.1U	5.4P	2.0U	2.7ปี	1.9U	1.9U	į.ŖÚ
gamma-chlordane	1.7 μg/kg	2.1Ų	0.35PJ	2.1U	0.96PJ	4.3	2.0U	2.7U	1.90	1.9U	1. <b>8</b> U
toxaphene	170 µg/kg	210Ü	180U	210U	210U	260U	200U	270U	190U	190Ü	180Ü
aroclor-1016	33 μg/kg	41U	34U	41U	41U	52U	38U	53U	38U	37U	35U
aroclor-1221	33 μg/kg	83U	69U	83U	84U	100U	78U	110U	76U	. 74U	71U
aroclor-1232	67 μ <b>g/kg</b>	41U	34U	41U	41U	52U	38U	53U	38U	37U	35U
aroclor-1242	33 μg/kg	41U	34U	4 <u>1</u> .U	41U	52U	38Ŭ	53U	3 <b>8</b> U	37U	35U
aroclor-1248	33 μg/kg	41U	34U	41Ú	41U	52Ų	38U	53U	38U	37U	35U
aroclor-1254	33 μg/kg	41U	34Ū	41Ü -	41U	52U	38U	53U	38U	37U	830
aroclor-1260	33 μg/kg	41U	34U	41U	41U	52U	38U	53U	38U	37U	1200

TCL COMPOUND QUALIFIERS	DEFINITION
J	Indicates an estimated value.
U	Compound was analyzed for but not detected.
В	Compound is found in the associated blank as well as in the sample.
D	This flag indicates all compounds identified in an analysis at a secondary dilution factor.
E	This flag indentifies compounds whose concentrations exceed the calibration range of the GC/MS instrumet.
P	Indicates there is a greater than 25% difference for detected concentrations between two GC columns. The lower of the two values is reported.

#### Comprehensive Analy Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$10	96-DV-03- \$11	Company of the Compan	
DATE SAMPLE COLLECTED	7/09/96	7/09/96		
TIME SAMPLE COLLECTED	17:20	17:00		
SAMPLE DEPTH	0-4"	3-4"		
QA/QC DESCRIPTION (if applicable)				

COMPOUND DETECTED (µg	/kg)				 	
PESTICIDES/PCBs	CROL					
methoxychlor	17 μg/kg	21U	18U			
endrin ketone	3.3μg/kg	4.0U	7.5P			
endrin aldehyde	3.3μg/kg	4.0U	3.6U			
alpha-chlordane	1.7 μg/kg	2.1Ų	1.8U			
gamma-chlordane	1.7 µg/kg	2. <u>1</u> U	2.3P			
toxaphene	170µg/kg	210Ų	180Ü			
aroctor-1016	33 μg/ <u>kg</u>	40U	36U			
aroclor-1221	33 μg/kg	82Ü	73U			
aroclor-1232	67 μg/kg	40U	36U			
aroclor-1242	33 μg/kg	40U	36ปั			
aroclor-1248	33 μg/kg	40U	36U			
aroclor-1254	33 μg/kg	170P	36Ü			
aroclor-1260	33 μg/kg	40U	36Ü			

TCL COMPOUND QUALIFIERS	DEFINITION
J	Indicates an estimated value.
Ü	Compound was analyzed for but not detected.
В	Compound is found in the associated blank as well as in the sample.
D	This flag indicates all compounds identified in an analysis at a secondary dilution factor.
E	This flag indentifies compounds whose concentrations exceed the calibration range of the GC/MS instrumet.
P	Indicates there is a greater than 25% difference for detected concentrations between two GC columns. The lower of the two values is reported.

### Comprehensive Analy—al Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$01	96-DV-03- 802	96-DV-03- \$03	96-DV-03- D03	96-DV-03- \$04	96-DV-03- \$05	96-DV-03- \$06	96-DV-03- 807	96-DV-03- \$08	96-DV-03- S09
DATE SAMPLE COLLECTED	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96	07/09/96
TIME SAMPLE COLLECTED	10:10	11:10	11:30	11:30	2:05	16:00	18:00	14:45	15:30	16:30
SAMPLE DEPTH	4'-4'6"	0-1"	18"-26"	18"-26"	18"-26'	5'	18"-28"	0-2"	2-3"	3-6"
QA/QC DESCRIPTION (if applicable)				Field Duplicate				Background		

ANALYTE DETECTED (mg/kg)											
TAL METALS/CYANIDE	CRDL										
aluminum	40 mg/kg	3470	10400	1910	1140	5290	9920	6210	6890	14300	4970
antimony	12 mg/kg	0.75U	0.70B	0.74U	0.90U	1.0B	3.5B	1.0U	0.68U	278	2.9B
arsenic	2 mg/kg	20.7	77.2	1.6B	1.2U	27.0	12.2	49.7	6.0	141	36.0
barium	40 mg/kg	182	272	12.2B	7.2B	222	268	320	112	13000	824
beryllium	l mg/kg	2.0	5.8	0.25U	0.30U	3.1	0.68B	3.3	0.62B	0.77B	2.6
cadmium	l mg/kg	0.47B	6.6	0.43B	0.30U	0.38B	0.23U	0.33U	0.57B	0.69B	3.9
calcium	1000 mg/kg	4060	5650	995B	979B	16400	25500	2280	12900	5410	19800
chromium	2 mg/kg	5.5	23.6	17.6	8.5 .	14.0	12.6	16.5	17.3.	62.0	50.7
cobalt	10 mg/kg	6.0B	16.2	2.0B	1.4B	9.6B	7.9B	8.7B	6.6B	17.5	11.2
copper	5 mg/kg	26.8	. 91.8	136	96.9	73.0	18.3	41.5	22.5	1830	1680
iron	20 mg/kg	3240	9430	24200	15900	5890	19200	3120	13200	59500	13800
lead	0.6 mg/kg	29.9	110	15.4	7.2	97.0	16.8	18.2	31.5	652	1990
magnesium	1000 mg/kg	1010B	1480	565B	560B	8070	13200	596B	6100	2480	18200
manganese	3 mg/kg	98.2	99.1	427	265	72.8	621	45.2	681	614	236
mercury	0.1 mg/kg	0.12U	0.48	0.12U	0.1 <i>5</i> U	0.14U	0.12U	0.17U	0.18	0.11Ū	0.21
nickel	8 mg/kg	10.4	34.6	18.7	11.3B	20.0	15.1	16.6	12.9	78.3	85.0
potassium	1000 mg/kg	611B	1390	126B	86B	810B	1010B	1230B	886B	1400	685B
selenium	1 mg/kg	1.3	8.8	0.99U	1.2U	6.3	0.93U	8.6	0.90U	2.1	2.8
silver	2 mg/kg	0.25U	0.21U	0.25U	0.30U	0.28U	0.23U	0.33U	0.45B	0.23B	0.90B
sodium	1000 mg/kg	276B	364B	327B	318B	448B	364B	406B	207B	254B	279B
thallium	2 mg/kg	1.0⊎	1. <b>8B</b>	2.1B	1.3B	1.7B	2.4	1.3U	2.2B	4.0	1.5B
vanadium	10 mg/kg	18.3	92.6	1.2B	0.62B	47.7	24.0	61.9	17.4	18.5	33.6
zinc	4 mg/kg	33.7	39.4	41.7	22.3	231	60.9	48.0	76.9	286	291
cyanide	2 mg/kg	0.27B	0.26B	0.19U	0.22U	0.34B	0.17U	0.29B	0.30B	2.3	3.7

TAL ANALYTE QUALIFIERS	DEFINITION
В	Value is real, but is above instrument detection limit and below contract-required detection limit.
U	Analyte was analyzed for but not detected.

#### Comprehensive Analystal Results - Soil Samples

SAMPLE NUMBERS	96-DV-03- \$10	96-DV-03- \$11	
DATÉ SAMPLE COLLECTED	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	17:20	17:00	
SAMPLE DEPTH	0-4"	3-4"	
QA/QC DESCRIPTION (if applicable)			

ANALYTE DETECTED (mg/kg)			
TAL METALS/CYANIDE	CRDL		
alu <u>min</u> um	40 mg/kg	8080	3290
antimony	12 mg/kg	8.4B	2.1B
arsenic	2 mg/kg	15.4	6.6
barium	40 mg/kg	318	93.8
beryllium	l mg/kg	1.9	1.1B
cadmium	l mg/kg	16.3	1.4
calcium	1000 mg/kg	48800 -	98000
chromium	2 mg/kg	43.2	18.7
cobalt	10 mg/kg	13.8	4.3B
copper	5 mg/kg	191000	405
iron	20 mg/kg	92300	16000
lead	0.6 mg/kg	12100	242
magnesium	1000 mg/kg	8860	36200
manganese	3 mg/kg	693	344
mercury	0.1 mg/kg	0.13U	0.11U
nickel	8 mg/kg	139	24.2
potassium	1000 mg/kg	763B	599B
selenium	1 mg/kg	2.6	0.93B
silver	2 mg/kg	7.6	0. <b>22</b> U
sodium	1000 mg/kg	809B	368B
thallium	2 mg/kg	4.5	1.3B
vanadium	10 mg/kg	28.1	15.6
zinc	4 mg/kg	11500	159
cyanide	2 mg/kg	0.60B	0.55

TAL ANALYTE QUALIFIERS	DEFINITION
В	Value is real, but is above instrument detection limit and below contract-required detection limit.
Ū	Analyte was analyzed for but not detected.

#### Comprehensive Analytica esults - Sediment Samples

SAMPLE NUMBERS	96-DV-03- \$15	96-DV-03- \$16	96-DV-03- \$17	96-DV-03- D17	96-DV-03- \$18	96-D V-03- S19	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45	
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6*	0-6"	0-6"	
QA/QC DESCRIPTION (if applicable)				Field Dunboate		Background	

COMPOUND DETECTED (ug/kg)							
VOLATILE ORGANIC COMPOUNDS	CROL						
chloromethane	10 μg/kg	<b>26</b> Ū	<b>29</b> U	15U	14U	18U	18U
bromomethane	10 μg/kg	<b>26</b> U	29U	15U	14U	18U	18U
vinyl chloride	10 μg/kg	26U	29U	15U	14U	18U	18U
chloroethane	10 μg/kg	26U	29U	15U	14U	18U	18U
methylene chloride	10 μg/kg	26BJU	29BJU	15BJU	14BJU	18BJU	1.8BJU
acetone	10 μg/kg	47	43	15U	14U	33	19
carbon disulfide	10 μg/kg	26U	29U	15U	14U	18U	18U
1,1-dichloroethene	10 μg/kg	26U	29U	15U	14U	18U	18Ü
1,1-dichloroethane	10 μg/kg	26U	29U	15Ü	14U	18U	Ï8U
1,2-dichlorothene (total)	10 μg/kg	<b>26</b> U	29U	15U	14U	18U	1 <b>8</b> U
chloroform	10 μ <b>g/kg</b>	26U	29U	15U	· 14U	18U	18U
1,2-dichloroethane	10 μg/kg	<b>26</b> U	29⊍	15U	14Ų	18U	18U
2-butanone	10 μg/kg	26Ū	101	15U	14U	5J	18Ú
1, Î, 1-trichloroethane	10 μg/kg	26U	29U	15U	14U	18U	1 <b>8</b> Ų
carbon tetrachloride	10 µg/kg	26U	29Ü	15U	14Ü	18U	18U
bromodichloromethane	10 μg/kg	26⊍	29U	15U	14U	18U	18Ų
1,2-dichloropropane	10 μg/kg	<u>26U</u>	29U	15U	14U	18U	18U
cis-1,3-dichloropropene	10 μg/kg	<u>2</u> 6U	29U	15U	14U	18U	18U
trichloroethene	10 μg/kg	0. <b>8</b> J	29U	0.7J	14U	18U	18U
dibromochloromethane	10 μg/kg	<b>26</b> U	<u>2</u> 9Ų	15U	14U	18U	18U
1,1,2-trichloroethane	10 μg/kg	26U	<b>29</b> U	15U	14U	18Ü	18U
benzene	10 μg/kg	<b>26</b> U	29Ü	15U	14Ü	18U	18U
trans-1,3-dichloropropene	10 μg/kg	26U	<b>2</b> 9U	15U	14U	18U	18U
bromoform	10 μg/kg	26U	29U	15U	14U	18U	18U
4-methyl-2-pentanone	10 μg/kg	26U	<b>29</b> U	15U	14U	18U	18U
2-hexanone	10 μ <b>g/kg</b>	26U	<b>29</b> U	15U	14U	18U	18U
tetrachloroethene	10 μg/kg	26U	<b>29</b> U	1.5U	14U	18U	18U
1,1,2,2-tetrachloroethane	10 μ <b>g/kg</b>	26U	29U	15U	14U	18U	1 <b>8</b> U
toluene	10 μg/kg	26U	29U	15U	14U	1 <b>8</b> U	1J

#### Comprehensive Analytic Lesults - Sediment Samples

SAMPLE NUMBERS	96-DV-03- \$15	96-DV-03- \$16	96-DV-03- \$17	96-DV-03- D17	96-DV-03- \$18	96-D V-03- \$19	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45	
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6"	0-6"	0-6"	
QA/QC DESCRIPTION (if applicable)				Field Duplicate		Background	

COMPOUND DETECTED (µg/kg)								
VOLATILE ORGANIC COMPOUNDS	CRQL							
chlorobenzene	10 μg/kg	26U	29U	15U	14U	18U	18U	
ethyl benzene	10 μg/kg	26U	. 29U	15U	14U	18U	18U	
styrene	10 μg/kg	26U	29U	15U	14U	18U	18U	
xylene (total)	10 μg/kg	26U	29U	15U	14U	18U	18U	

SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL							
phenol	330 μg/kg	850U	940U	500U	460U	580U	600U	
bis(2-chloroethyl)ether	330 μg/kg	850U	940U	500U	460U	580U	600U	
2-chlorophenol	330 μg/kg	850U	940U	500U	460U	580⊍	600U	
1,3-dichlorobenzene	330 μg/kg	850U	940U	500U	460U	580U	600U	
1,4-dichlorobenzene	330 µg/kg	850U	940U	500U	460U	580U	600U	
1,2-dichlorobenzene	330 μg/kg	850U	940U	500U	460U	580U	600U	
2-methylphenol	330 μg/kg	850U	940U	500U	460U	580U	600U	
2,2-oxybis(1-chloropropane)	330 μg/kg	850U	94QU	500U	460U	580U	600U	
4-methylphenol	330 μg/kg	850U	940U	500U	460U	580U	600U	
n-nitroso-di-n-diproprylamine	330 μg/kg	850U	940U	500U	460U	580U	600U	
hexachloroethane	330 μg/kg	850U	940U	500U	460U	580U	600U	
nitrobenzene	330 μg/kg	850U	940U	500U	460U	580U	600U	
isophorone	330 μg/kg	850U	940U	500U	460U	580U	600U	
2-nitrophenol	330 μg/kg	850U	940U	.500U	460U	580U	600U	
2,4-dimethylphenol	330 μg/kg	850U	940U	500U	460U	580U	600U	
bis(2-chloroethoxy)methane	330 μg/kg	850U	940Ü	500U	460U	580U	600U	
2,4-dichlorophenol	330 μg/kg	850 <u>U</u>	940U	500Ų	460U	580Ü	600Ū	
1,2,4-trichlorobenzene	330 µg/kg	850U	940U	500U	460U	580U	600U	
naphthalene	330 µg/kg	70J	77 J	31J	25J	18J	63J	
4-chloroaniline	330 μg/kg	850U	940U	500U	460U	5 <b>8</b> 0U	600Ŭ	
hexachlorobutadiene	330 μg/kg	850U	940U	500U	460U	580Ų	600U	
4-chloro-3-methylphenol	330 μg/kg	850U	940U	500U	460U	580U	600Ų	
2-methylnaphthalene	330 μg/kg	120J	75J	23J	19J	16J	31J	

#### Comprehensive Analytic Results - Sediment Samples

SAMPLE NUMBERS	96-DV-03- \$15	96-DV-03- .\$16	96-DV-03- S17	96-DV-03- D17	96-DV-03- S18	96-D V-03- \$19	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45	
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6"	0-6"	0-6"	
QA/QC DESCRIPTION (if applicable)				Field Dunlicate		Background	

COMPOUND DETECTED (µg/kg)	·							 	
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL								
hexachlorocyclopentadiene	330 µg/kg	850U	94 <u>0</u> U	500U	460U	580U	600U		
2,4,6-trichlorophenol	330 μg/kg	850U	940Ų	500U	460U	580U	600U		
2,4,5-trichlorophenol	800 μg/kg		2400U	1300Ü	1200U	1500U	1500U		
2-chloronaphthalene	330 μg/kg	<b>85</b> 0U	940U	500U	460U	580U	600U		
2-nitroaniline	800 μg/kg	2100U	2400U	1300Ü	1200U	1500U	1500U		
dimethylphthalate	330 μg/kg	850U	940U	500U	460U	580Ü	600U		
acenaphthylene	330 μg/kg	850U	61.J	160J	150J	14J	22J		
2,6-dinitrotoluene	330 μg/kg	850U	940U	500U	460U	580U	600U		
3-nitroaniline	330 μg/kg	2100U	2400U	1300U	1200U	1500U	1500U		
acenaphthene	330 μg/kg	59J	92J	21J	15J	40J	891		
2,4-dinitrophenol	800 μg/kg	2100U	2400U	1300U	1200U	1500U	1500U		
4-nitrphenol	800 μg/kg	2100Ü	2400U	1300U	1200U	1500U	1500U		
dibenzofuran	330 μg/kg	70J	95J	11J	7J	34J	100J		
2,4-dinitrotoluene	330 μg/kg	850U	940U	500U	460U	580U	600U		
diethylphthalate	330 μg/kg	850U	39J	24Ј	27J	51J	33J		
4-chlorophenyl-phenyl ether	330 μg/kg	<b>850U</b>	940U	500U	460U	580U	600U		
fluorene	330 μg/kg	76J	160J	53J	43J	60J	130J		
4-nitroaniline	800 μg/kg	2100U	2400U	1300U	1200U	1500U	1500U		
4,6-dinitro-2-methylphenol	800 μg/kg	2100U	2400U	1300U	1200U	1500U	1500U		
n-nitrosodiphenylamine	330 μg/kg	850U	940U	500U	460U	580U	600U		
4-bromophenyl-phenyl ether	330 μg/kg	850U	940U	500U	460U	580U	600U		
hexachlorobenzene	330 μg/kg	. <b>850</b> U	940U	500U	460U	580U	600U		
pentachlorophenol	800 μg/kg	2100U	2400U	1300U	1200U	1500U	1500U		
phenanthrene	330 μg/kg	890	1500	700	610	830	1900		
anthracene	330 μg/kg	110J	230J	400J	390J	75J	170J		
carbazole	330 μg/kg	85J	110 <u>J</u>	20J	15J	84J	190J		
di-n-butylphthalate	330 μg/kg	850BJŲ	940BJU	500BJU	460BJU	580BJU	600BJU		
fluoranthene	330 µg/kg	1100	2600	2000	2000	1400	2200		
pyrene	330 μg/kg	1300_	3000	4700E	3700E	1400	2700		

#### Comprehensive Analytica. Results - Sediment Samples

SAMPLE NUMBERS	96-DV-03- \$15	96-DV-03- \$16	96-DV-03- \$17	96-DV-03- D17	96-DV-03- \$18	96-D V-03- \$19		
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96		
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45		
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6"	0-6"	0-6"		
QA/QC DESCRIPTION (if applicable)				Field Duplicate		Background		

COMPOUND DETECTED (µg/kg)								
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL							
butylbenzylphthalate	330 μg/kg	850U	940U	500U	460U	580U	84J	
3,3-dichlorobenzidine	330 μg/kg	850U	940U	500U	460U	580U	600U	
benzo(a)anthracene	330 μg/kg	490J	1500	2200	2100	600	1300	
chrysene	330 μg/kg	550J	1500	2500	2100	710	1500	
bis(2-ethylhexyl)phthalate	330 μg/kg	850U	470J	500U	84J	330J	360J	
di-n-octylphthalate	330 μg/kg	850U	940U	500U	460U	580U	600U	
benzo(b)fluoranthene	330 μg/kg	800J	2500	2700	2300	1000	1800	
benzo(k)fluoranthene	330 μg/kg	300J	950	930	930	410J	690	
benzo(a)pyrene	330 μg/kg	460J	1800	2100	2100	580	1100	
indeno(1,2,3-cd)pyrene	330 μg/kg	460J	1900	1900	1400	650	1400	
dibenzo(a,h)anthracene	330 μg/kg	120J	480J	430J	320J	150J	31 <u>0J</u>	
benzo(g,h,i)perylene	330 μg/kg	490J	2000	2200	1600	660	1400	

PESTICIDES/PCBs	CROL							
alpha-BHC	1.7 μg/kg	4.5U	4.9U	2.6U	2.4U	3.0U	3.1U	
beta-BHC	1.7 μg/kg	4.5U	4.9U	2.6U	2.4U	3.0U	3.1U	
delta-BHC	1.7 μg/kg	4.5U	4.9U	1.4ЈР	1.5JP	3.0U	3.1U	
gamma-BHC (Lindane)	1.7 μg/kg	4.5Ü	4.9U	2.6U	2.4U	3.0U	3.1U	
heptachlor	1.7 μg/kg	4.5U	4.9U	2.6U	2.4U	3.0U	3.1U	
aldrin	1.7 μg/kg	4.5U	4.9U	2.6U	2.4U	3.0U	1.3JP	
heptachlor epoxide	1.7 μg/kg	4.5U	4.9U	2.6U	2.4U	3,0U	3.1U	
endogulfan I	1.7 µg/kg	4.5U	4.9U	2.6U	2.4U	3.0U	3.1U	
lieldrin	3.3 μg/kg	9.6P	2.6ЈР	0.86ЛР	4.6U	2.5JP	4.0ЛР	
I,4-DDE	3.3 μg/kg	8.7U	2.2ЛР	5.0U	4.6U	2.6ЛР	2.4ЈР	
ndrin	3.3 μg/kg	34	9.4U	3.4JP	4.8P	2.4ЈР	6.0U	
ndosulfan II	3.3 μg/kg	8.7U	9.4U	5.0U	4.6U	5.8U	6.0U	
I,4-DDD	3.3 μg/kg	1.7JP	9.4U	2.2ЛР	4.9	3.4ЛР	3.6ЈР	
ndosulfan sulfate	3.3 μg/kg	3.7ЈР	9.4U	5.0U	4.6U	3.0ЛР	6.0U	
I,4-DDT	3.3 μg/kg	4.4JP	2.4JP	2.1JP	2.2JP	2.7JP	2.3JP	

#### Comprehensive Analytic\_lesults - Sediment Samples

	96-DV-03- \$15	96-DV-03- \$16	96-DV-03- \$17	96-DV-03- D17	96-DV-03- \$18	96-D V-03- \$19	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45	
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6"	0-6"	0-6"	
QA/QC DESCRIPTION (if applicable)				Field Duplicate		Backeround	

COMPOUND DETECTED (µg/k	(g)		•				-	
PESTICIDES/PCBs	CROL							
methoxychlor	17 μg/kg	18J	17JP	50	65	8.9ЛР	12JP	
endrin ketone	3.3 μg/kg	8.7U	4.9J	3.2JP	4.0JP	5.8U	2.5JP	
endrin aldehyde	3.3 μg/kg	7.9JP	9.4U	5.0U	4.6U	5.8U	6.0U	
alpha-chlordane	1.7 μg/kg	12	1.8ЛР	0.72JP	2.4U	7.0P	6.6P	
gamma-chlordane	1.7 µg/kg	4.9P	3.2J	1.4J	2.4U	6.9	5.6P	
toxaphene	170 µg/kg	450U	49 <u>0</u> U	260U	240U	300U	310U	
aroclor-1016	33 μg/kg	87U	94U	50U	46Ü	58U	60U	
aroclor-1221	33 μg/ <u>kg</u>	180U	190U	100U	93U	120U	120U	
aroclor-1232	67 μg/kg	87Ü	94U	50U	46U	58U	60U	
aroclor-1242	33 μg/kg	. <b>87</b> U	94U	50U	46U	58U	60U	
aroclor-1248	33 μg/kg	87U	94U	50U	.46U	58U	60U	
aroclor-1254	33 μg/kg	660	94U	50Ų	46U	58U	60U	
aroclor-1260	33 μg/kg	87U	94U	<b>50</b> U	46U	58U	60U	

TCL COMPOUND QUALIFIERS	DEFINITION
J	Indicates an estimated value.
U	Compound was analyzed for but not detected.
В	Compound is found in the associated blank as well as in the sample.
D	This flag indicates all compounds identified in an analysis at a secondary dilution factor.
E	This flag indentifies compounds whose concentrations exceed the calibration range of the GC/MS instrumet.
P	Indicates there is a greater than 25% difference for detected concentrations between two GC columns. The lower of the two values is reported.

#### Comprehensive Analytic Results - Sediment Samples

	96-DV-03- \$15	96-DV-03- \$16	96-DV-03- \$17	96-DV-03- D17	96-DV-03- S18	96-D V-03- \$19	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	10:30	11:00	15:15	15:15	14:45	15:45	
SAMPLE DEPTH	15'-18'	15'-18'	0-6"	0-6"	0-6"	0-6"	
QA/QC DESCRIPTION (if applicable)				Field Duplicate		Background	

ANALYTE DETECTED (mg/kg)								<del></del>	 •	
TAL METALS/CYANIDE	CRDL									
aluminum	40 mg/kg	2750	6590	9750	8450	8940	8600			
antimony	12 mg/kg	9.1Ŭ	13.5U	7.9U	8.1U	10Ü	10.1U			
arsenic	2 mg/kg	10.3	12.6	9.2	9.2	6.0	9			
barium	40 mg/kg	73.0	137	128	125	117	130			
beryllium	l mg/kg	0.28B	0.35B	0.54B	0.48B	0.5B	0.47B			
cadmium	l mg/kg	1.0U	1.5U	0.89U	0.91U	1.1U	1.10			
calcium	1000 mg/kg	53600	11800	61700	58100	81900	74900			
chromium	2 mg/kg	23.1	17.2	14.9	13.7	18	22.3			
cobalt	10 mg/kg	3.7B	6.7B	6.6B	6.2B	6.5B	7.2B			
copper	5 mg/kg	29.3	24.7	29.3	29.0	26	33.5			
iron	20 mg/kg	11300	13500	16400	15500	15000	15800			
lead	0.6 mg/kg	33.7	42.0	51.6	47.2	30.5	47.9			
magnesium	1000 mg/kg	13600	21600	17200	16100	24200	20600			
manganese	3 mg/kg	205	545	299	258	330	420			
mercury	0.1 mg/kg	0.0 <b>8</b> U	0.12U	0.63	0.65	0.09U	0.13B			
nickel	8 mg/kg	13.4	18.7B	16.2	17.9	19.9	23.7			
potassium	1000 mg/kg	297B	736B	812B	709B	1090B	991B			
selenium	l mg/kg	1.1B	0.59B	0.4B	0.59B	0.73B	0.59B			
silver	2 mg/kg	1.4U	2. Ì Ü	1.2U	1.2U	1.5U	1. <b>5</b> Ü			
sodium	1000 mg/kg	165B	206B	144B	131B	191B	183B			
thallium	2 mg/kg	0.68B	0.98U	1.0B	0.66B	0.84B	0.9B			
vanadium	10 <u>mg/kg</u>	9.6B	16.8B	21.8	19.2	20.2	20			
zinc	4 mg/kg	80.7	143	93.6B	80.4	114	.132			
cyanide	2 mg/kg	0.27B	0.17U	0.19B	0.21B	0.23B	0.32B			

TAL ANALYTE QUALIFIERS	DEFINITION
В	Value is real, but is above instrument detection limit and below contract-required detection limit.
U	Analyte was analyzed for but not detected.

#### Comprehensive Analytical Results - Monitoring Wells Samples

SAMPLE NUMBERS	96-DV-03- \$22	96-DV- 03-S23	96-DV-03- D23	96-DV-03- \$24	96-DV-03- 825	
DAȚE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	9:50	10:50	10:50	13:55	14:30	
SAMPLE DEPTH (below surface)			i i			
QA/QC DESCRIPTION (if applicable)	Background		Field Duplicate			

COMPOUND DETECTED (ug/L)						U.V. (1000)	
VOLATILE ORGANIC COMPOUNDS	CROL						
chloromethane	10 μg/L	10U	10U	10U	10U	10U	
bromomethane	10 μg/L	10U	10U	JOU	10U	IOŪ	
vinyl chloride	10 μ <b>g/</b> Ľ	10Ų	<b>4</b> J	<b>4</b> J	100	10U	
chloroethane	10 μg/L	10U	2J	10U	10U	22	
methylene chloride	10 μg/L	10U	10U	4J	10U	6J	
acetone	.10 μg/L	10U	30	29	10U	10U	
carbon disulfide	10 μ <b>g/L</b>	10U	10U	10U	10U	10U	
1,1-dichloroethene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	
1,1-dichloroethane	10 μg/L	10U	13	13	10U	10U	
1,2-dichlorothene (Total)	10 μ <b>g/</b> L	10U	150	140	10U	10U -	
chloroform	10 μg/L	10Ü	10U	10U	10U	10U	
1,2-dichloroethane	10 μg/L	10U	10U	100	10U	10U	
2-butanone	10 μ <b>g/</b> L	10U	IQU	10U	10U	10Ų	
1,1,1-trichloroethane	10 µg/L	IQÜ	10U	10U	10U	10Ü	
carbon tetrachloride	10 μ <b>g/L</b>	10U	10U	IOŲ	10U	10U	
bromodichloromethane	10 μ <b>g/L</b>	10U	10U	IOU	10U	10U	
1,2-dichloropropane	10 μg/L	10U	10U	10U	10U	10U	
cis-1,3-dichloropropene	10 μg/L	10U	10U	10U	10U	10U	
trichloroethene	10 μ <b>g/L</b>	10U	10U	10U	10U	10U	
dibromochloromethane	10 μ <b>g/L</b>	10U	10U	10U	10U	10U	
1,1,2-trichloroethane	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	
benzene	10 μg/L	10U	10U	10U	10U	10U	
trans-1,3-dichloropropene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	
bromoform	10 μg/I.	10U	10U	10U	IOU	10U	
4-methyl-2-pentanone	10 μg/L	10U	10U	10U	10U	10U	
2-hexanone	10 μg/l.	10U	10U	IOU	10U	10Ü	
tetrachloroethene	10 μ <b>g/</b> L	10Ŭ	10U	10U	10U	10U	
1,1,2,2-tetrachloroethane	10 µg/1.	10U	10Ù	10U	10U	10U	
toluene	10 μg/L	10U	10U	1J	10U	15	
chlorobenzene	10 μg/L	10U	10Ü	10U	10U	10U	

#### Comprehensive Analytical Ruits - Monitoring Wells Samples

SAMPLE NUMBERS		96-DV-03- \$22	96-DV- 03-\$23	96-DV-03- D23	96-DV-03- \$24	96-DV-03- 825	
DATE SAMPLE COLLECTED		7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED		9:50	10:50	10:50	13:55	14:30	
SAMPLE DEPTH (below surface)							
QA/QC DESCRIPTION (if applicable)		Background		Field Duplicate			
ethyl benzene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	
styrene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	
xylene (Total)	10 µg/L	10U	10U	10U	10U	4J	

SPAN VOLATU F. ODGANIG GOMPONNOG	CROI						
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL	1011	LACED	Lioti	1011	Lioti	
phenol	10 μg/L	10U	130EB	10U	10U	100	
bis(2-chloroethyl)ether	10 μ <b>g/</b> L	10Ü	10U	10U	10U	10U	
2-chlorophenol	.10 μg/L	10U	10U	10U	10U	10U	
1,3-dichlorobenzene	10 μg/L	10U	10U	10U	10U	10U	
1,4-dichlorobenzene	10 μg/L	100	IOU	10U	10U	10U	
1,2-dichlorobenzene	10 μg/L	10U	10U	10U	10U	10U	
2-methylphenol	10 μ <b>g/L</b>	IOU	10Ü	10U	10U	10U	
4-methylphenol	10 μ <b>g/L</b>	10U	10U	10U	10U	10U	
n-nitroso-di-n-propylamine	10 μg/L	IÕŪ	10U	10U	IŌU	100	
hexachloroethane	ĺ0 μg/l.	IOU	10Ü	10U	10Ŭ	100	
nitrobenzene	10 μg/L	10U	10U	10Ü	10U	10U	
isophorone	10 μ <b>g/</b> Ľ	10U	10U	10U	1.0U	10Ų	
2-nitrophenol	10 μg/L	10U	10U	10U	10U	10U	
2,4-dimethylphenol	10 μ <b>g/</b> L	10U	10Ü	10U	10U	10U	
bis(2-chloroethoxy)methane	10 μg/L	10U	10U	10U	IOU	10U	
2,4-dichlorophenol	10 μg/L	10U	10U	10U	10U	10U	
1,2,4-trichlorobenzene	10 μg/L	10U	10U	IOU	10U	10U -	
naphthalene	10 μg/L	10U	10U	10U	10U	10U	
4-chloroaniline	10 μg/L	10U	10Ü	10U	10U	10U	
hexachlorobutadiene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	
4-chloro-3-methylphenol	10 μg/L	10U	10U	10U	10U	100	
2-methylnaphthalene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	

Comprehensive Analytical Readts - Monitoring Well Samples												
SAMPLE NUMBERS		96-DV-03- \$22	96-DV- 03-S23	96-DV-03- D23	96-DV-03- \$24	96-DV-03- \$25						
DATE SAMPLE COLLECTED		7/09/96	7/09/96	7/09/96	7/09/96	7/09/96						
TIME SAMPLE COLLECTED		9:50	10:50	10:50	13:55	14:30						
SAMPLE DEPTH (below surface)												
QA/QC DESCRIPTION (if applicable)	Backeround		Field Durolicate									
COMPOUND DETECTED (µg/L)							<u> </u>					
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL											
hexachlorocyclopentadiene	10 μg/L	10U	10U	10U	10U	10U						
2,4,6-trichlorophenol	1Ö μg/L	10Ŭ	100	10Ü	IOU	TOU						
2,4,5-trichlorophenol	25 μg/L	25U	25U	25U	25U	25U						
2-chloronaphthalene	10 μg/L	10U	10U	10U	10U	10U						
2-nitrospiline	25 µg/L	2511	2511	2511	25U	25U						

COMPOUND DETECTED (μg/L)		* *****************************			***************************************		aia-
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL						*
hexachlorocyclopentadiene	10 µg/L	10Ü	ĪOU	10U	10U	10U	8
2,4,6-trichlorophenol	1Ö μg/L	10Ŭ	10U	100	IOU	10U	0000
2,4,5-trichlorophenol	25 μg/L	25U	25U	25U	25U	25U	2000
2-chloronaphthalene	10 μg/L	10U	10U	10U	10Ū	10 <b>U</b>	0000
2-nitroaniline	25 μg/L	25U	25U	25U	25U	25U	00000
dimethyl phthalate	10 μ <b>g/L</b>	10U	10U	10U	10U	100	8000
acenaphthylene	10 μg/L	10U	10U	10U	10U	100	20000
2,6-dinitrotoluene	10 μg/L	10U	10U	10U	10U	10U	
3-nitroaniline	25 μg/L	25U	25U	25U	25U'	25U	10000
acenaphthene	10 μg/L	10U	10U	10U	10U	10U	8
2,4-dinitrophenol	25 μg/L	25U	25U	25U	25U	25U	
4-nitrophenol	25 μg/L	25Ü	25U	25U	25U	25U	
dibenzofuran	10 μ <b>g/</b> L	10U	10U	IOU	10U	10U	200000
2,4-dinitrotoluene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	200000
diethylphthalate	10 μg/L	10JBU	10JBU	10JBU	10U	ÏOU	00000
4-chlorophenyl-phenyl ether	10 μg/L	10U	10U	10U	10U	10U	200000
fluorene	10 μ <b>g/L</b>	10U	10U	10U	10U	100	00000
4-nitrogniline	25 μg/L	25U	25U	25U	25U	25U	88
4,6-dinitro-2-methylphenol	25 μg/L	25U	25U	25U	25U	25U	
n-nitrosodiphenylamine	10 μ <b>g/</b> L	10U	10U	10U	10U	10U	8
4-bromophenyl-phenyl ether	10 μ <b>g/</b> L	10U	100	10U	10U	10U	
hexachlorobenzene	10 μ <b>g/</b> L	10Ų	100	10U	10U	10U	
pentachlorophenol	10 μg/L	<b>25</b> U	25U	25U	25U	25Ü	
phenanthrene	10 μg/L	10U	10Ü	ĬÓŨ	UOI	ĪOÜ	20000
anthracene	10 μg/L	10U	10Ü	10U	10U	10U	8
di-n-butylphthalate	10 μg/L	10U	10U	10U	10U	10Ú	
fluoranthene	10 μg/L	10U	10U	10U	10U	100	8809
pyrene	10 μg/l.	· 10U	10U	10Ù	10U	10U	8888
butylbenzylphthalate	10 μg/L	10U	10U	10U	10U	100	
3,3'-dichlorobenzidine	10 μg/L	10U	10U	10U	UOI	10U	888

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#### Comprehensive Analytical Rents - Monitoring Well Samples

SAMPLE NUMBERS	96-DV-03- S22	96-DV-03- \$23	96-DV-03- D23	96-DV-03- \$24	96-DV-03- \$25	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	9:50	10:50	10:50	13:55	14:30	
SAMPLE DEPTH (below surface)						
QA/QC DESCRIPTION (if applicable)	Background		Field Duplicate			

COMPOUND DETECTED (µg/L)							-	
SEMI-VOLATILE ORGANIC COMPOUNDS	CRQL							
benzo(a)anthracene	10 μ <b>g/</b> L	100	100	10U	10U	IOU		
bis(2-ethylhexyl)phthalate	10 μ <b>g/</b> L	1J	2J	10U	2J	10U		
chrysene	10 μ <b>g/</b> L	10U	10U	10U	10U	10Ŭ		
di-n-octyl phthalate	10 μ <b>g/</b> L	<b>3</b> J	IJ	10U	10U	10U		
benzo(b)fluoranthene	10 μ <b>g/</b> L	10U	10U	10U	10U	10U		
benzo(k)fluoranthene	10 μg/L	ĬOŨ	10Ü	IOU	10U	10U		
benzo(a)pyrene	10 μg/Ľ	100	10U	10U	10U	IOÚ		
indenol(1,2,3-cd)pyrene	10 μ <b>g/L</b>	10U	10U	10Ü	10U	10U		
dibenzo(a,h)anthracene	10 μ <b>g/L</b>	10U	10U	10U	10U	10U		
benzo(g,h,i)perylene	10 μg/L	ÏÓU	10Ų	10U	10U	10U		

PESTICIDES/PCBs	CROL					
alpha-BHC	0.05μg/L	0.050U	0.050U	0.050U	0.050U	0,050Ū
beta-BHC	0.05μ <b>g/</b> L	0.050U	0.050U	0.050U	0.050U	0.050U
delta-BHC	0.05μ <b>g/</b> L	0.050U	0.050U	0.050U	0.050U	0.050U
gamma-BHC (Lindane)	0.05μ <b>g/</b> L	0.050U	0.050U	0.050U	0.050Ų	0.050Ŭ
heptachlor	0.05μ <b>g/</b> L	0:050U	0.051PJ	.0082PJ	.0095PJ	.0092PJ
aldrin	0.05μ <b>g/</b> L	0.050U	0.050U	0.050U	0.050Ŭ	0.050U
heptachlor epoxide	0.05μg/L	0.050U	0.050U	0.050U	0.050U	0.050U
endosulfan l	0.05μ <b>g/</b> L	0.0 <b>5</b> 0U	0.050U	0.050U	0.050U	0.050U
dieldrin	0.10μ <b>g/</b> L	0.1ÖU	0.10U	0.10U	0.10U	0.10U
4,4'-DDE	0.1 <u>0</u> μ <b>g/</b> L	0.10U	0.10U	0.10U	0.10U	0.10U
endrin	0.10μ <b>g/</b> L	0.10U	0.10U	0.10U	0.10U	0.10U
endosulfan II	<u>0</u> .10μ <b>g/</b> L	0.10U	0.10Ü	0.Ï0U	0.10U	0.10U
4,4'-DDD	0.10µg/L	0.10U	0.10U	0.10U	0.10U	0.10U
endosulfan sulfate	0.10µg/L	0.10U	0.10U	0.10U	0.10U	0.10U
4,4'-DDT	0.10µg/L	0.10U	0.10U	0.10U	0.10U	0.10U

### Comprehensive Analytical Results - Monitoring Well Samples

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SAMPLE NUMBERS	96-DV-03- \$22	96-DV- 03-S23	96-DV-03- D23	96-DV-03- \$24	96-DV-03- \$25	The Control of Control
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	9:50	10:50	10:50	13:55	14:30	
SAMPLE DEPTH (below surface)	*	*4				
QA/QC DESCRIPTION (if applicable)	Background		Field Duplicate			

COMPOUND DETECTED (µg/L)						
PESTICIDES/PCBs	CROL					
methoxychlor	0.50 μg/L	0.50Ū	0.50U	0.50U	0.50U	0.50U
endrin ketone	0.10 μg/L	0.10U	0.10U	0. <u>1</u> 0U	0.100	0.10 <u>U</u>
endrin aldehyde	0.10 μ <b>g/</b> L	0.1 <u>0</u> U	0.10U	0.10Ų	0.10U	0.10U
alpha-chlordane	0.05 μg/L		0.050U	0.050U	0.050Ü	0.050U
gamma-chlordane	0.05 μ <b>g/</b> L	0.050U	0.050U	0.050U	0:050U	0.050U
toxaphene	5.0 μ <b>g/</b> L	5.0U	5.0U	.5.0U	5.0U	5.0U
aroclor-1016	1.0 μg/L	1.0U	1.0U	1.0U	1.0U	1.0U
aroclor-1221	1.0 μg/ <u>L</u>	<b>2</b> .0U	2.0U	2.0U	2.0U	2.0U
aroclor-1232	2.0 μg/L	1.0U	1.0U	1.0U	1.QU	1.0U
aroclor-1242	1.0 <u>µg/</u> L	1.0U	1.0U	1.0U	1.0U	1.0U
aroclor-1248	1.0 μ <b>g/</b> L	1.0U	1.0U	1.0U	1.0U	1.0U
aroclor-1254	1.0 μ <b>g/</b> Ľ	1.0U	1.0Ü	1.0U	1.0U	1.0U
aroclor-1260	1.0 μg/L	1.0U	1.0U	1.0U	1.0U	1.0U

TCL COMPOUND QUALIFIERS	DEFINITION
J	Indicates an estimated value.
U	Compound was analyzed for but not detected.
В	Compound is found in the associated blank as well as in the sample.
D	This flag indicates all compounds identified in an analysis at a secondary dilution factor.
E	This flag indentifies compounds whose concentrations exceed the calibration range of the GC/MS instrumet.
l <sup>p</sup>	Indicates there is a greater than 25% difference for detected concentrations between two GC columns. The lower of the two values is reported.

### Comprehensive Analytical Results - Monitoring Well Samples

SAMPLE NUMBERS	96-DV-03- \$22	96-DV- 03-823	96-DV-03- D23	96-DV-03- \$24	96-DV-03- 825	
DATE SAMPLE COLLECTED	7/09/96	7/09/96	7/09/96	7/09/96	7/09/96	
TIME SAMPLE COLLECTED	9:50	10:50	10:50	13:55	14:30	
SAMPLE DEPTH (below surface)						
QA/QC DESCRIPTION (if applicable)	Background		Field Duplicate			

ANALYTE DETECTED (µg/L)							
TAL MĘTALS/CYĄNIDE	CRDL						
aluminum	200 μg/L	5730	10000	361	98.4B	183B	
antimony	60 µg/ <u>I</u> .	3.QŲ	3.0U	3.0U	3.0U	3.0U	
arsenic	10 μ <b>g/</b> L	547	9.6B	4.0U	4.0U	4.0U	
barium	200 μg/L	2530	330	347	92.5B	84.4B	
beryllium	5 μg/L	1.0U	1.0U	1.0U	1.0U	1.ÖU	
cadmium	5 μg/L	1.0U	1.0U	1.0U	1.0U	1.00	
calcium	5000 μg/L	190000	224000	81700	78800	87000	
chromium	10 μg/L	17.3	17.4	1.2B	7.6B	1.0U	
cobalt	50 μg/L	24.6B	12.3B	2.0B	1.0U	1.0U	
copper	25 μg/L	27.8	30.8	4.9B	3.2B	3.1B	
iron	100 μ <b>g/</b> L	38000	20600	720	180	332	
lead	3 μg/L	13.4	21,5	8.7	2.8B	1.1B	
magnesium	5000 μg/L	75400	76800	12400	23100	25000	
manganese	15 μg/L	1000	1000	86.7	46.3	107	
mercury	0.2 μg/L	0.20U	0.20U	0.20U	0.20U	0. <b>2</b> 0U	
nickel	40 μ <b>g/</b> L	17.3B	29.7B	14.2B	1.1B	2.2B	
potassium	5000 μg/L	9570	39600	114000	2720B	3390B	
selenium	5 μg/L	8.3	4.0Ü	4.0U	4.0U	4.0U	
silver	10 μ <b>g/L</b>	1.0U	1.0U	1.0U	1.0U	1.0U	
sodium	5000 μg/L	81800	46200	98700	13400	12400	
thallium	l0 μ <b>g/</b> L	4.6B	4.4B	4.0U	4.0U	4.0U	
vanadium	50 μ <b>g/</b> Ľ	14.8B	20.9B	1.0U	1.0U	1.0U	
zinc	20 μ <b>g/</b> L	89.7	77.7	10B	7.2B	9.5B	
cyanide	10 μg/L	9.2B	3.0U	3.0U -	3.0U	3.0U	

TAL ANALYTE QUALIFIERS	DEFINITION
В	Value is real, but is above instrument detection limit and below contract-required detection limit.
U	Analyte was analyzed for but not detected.

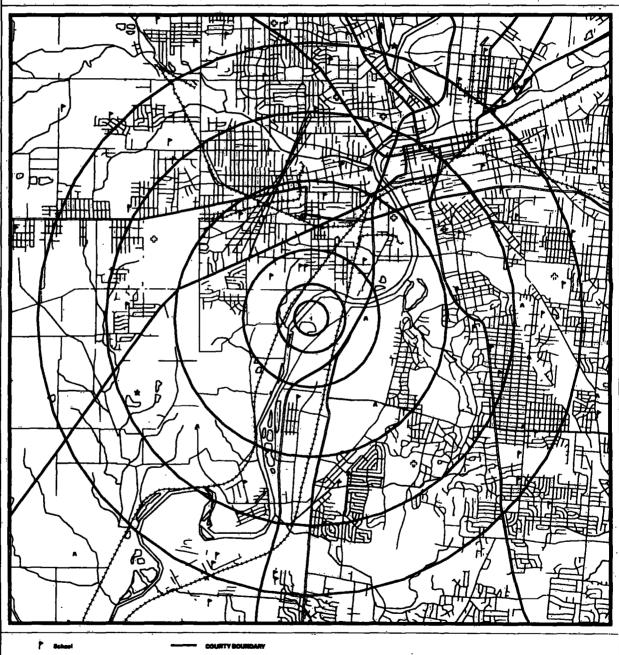
## APPENDIX D: FOUR-MILE RADIUS MAP

## OhioEPA

Bivision of Emergency & Romedial Response

GEOGRAPHIC INFORMATION SYSTEM 4-MILE RADIUS MAP

Montgomery County SOUTH DAYTON DUMP



ř	School		COUNTY BOUR	NDANY				
٠,	Hisephal		LIMIT OF NADI	NA PROM GITE		•		
٠.		<del></del>	COUNTY ROAD	•				Ä
*	PEDERAL ENDANGEMEN GPECES		MUNICIPAL NO	MD				
•	* STATE ČÍNDANGÉRAD OFFICIOS		ATTAC ON FRED	ERAL HOCHWAY				<b>*</b>
_		<del>i</del>	RAILROAD	_	=			71
A	PUBLIC GURFACE-WATER SYSTEM		STREAM	1	0	1	2 MILES	· <b>y</b>
A	FUBLIC GROUND-HITTER EVETEN	•	OITE		<u> </u>			

Montgomery County SOUTH DAYTON DUMP RADIUS TOTAL HOUSING (MILES) PEOPLE WHITE BLACK INDIAN ASIAN OTHER (UNITS) 3.00-4.00 80,864 58,736 21,133 131 467 36,539 226 56 262 135 2.00-3.00 52,475 26,656 25,261 21,576 20,107 8,764 4,806 15,107 16 100 33 1.00-2.00 28 0.50-1.00 2,679 264 2,372 0 2 1,093 117 71 0 .0 0.25-0.50 43 0 51 0.00-0.25 17 17 0 . 0 0 0 9 -----156259 90,522 63,944 857 203 396 68,032